CCME

Canadian Council of Ministers of the Environment
Le Conseil canadien des ministres de l'environnement

# National Inventory of Environmental Research and Development Projects

# Inventaire national des projets de recherche et développement sur l'environnement

CCME-R-TRE-022
November 1990 Novembre 1990

Canadian Council
of Ministers
of the Environment

Le Conseil canadien
des ministres
de l'environnement

# NATIONAL INVENTORY OF ENVIRONMENTAL RESEARCH AND DEVELOPMENT PROJECTS

# INVENTAIRE NATIONAL DES PROJETS DE RECHERCHE ET DÉVELOPPEMENT SUR L'ENVIRONNEMENT

Compiled by the
Research Advisory
Committee

Compilé par
Le Comité consultatif
de la recherche

CCME-R-TRE-022

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# INTRODUCTION

This second edition of the National Inventory of Environmental Research and Development Projects, was initiated by the Research Advisory Committee of the Canadian Council of Ministers of the Environment (CCME). First published in October 1988, the document provides summary information on environment-related R&D projects carried out in Canada or funded by a Canadian government agency, university or private organization.

The purpose of the inventory is to provide a comprehensive summary listing of all significant environmental research and development projects currently underway or recently completed in Canada. This summary serves as a primary reference in the transfer of environmental research information, helping to reduce duplication of effort and to gain maximum value from research funds.

The database from which this summary inventory is produced consists of detailed records of over 1700 research projects mainly funded by Environment Canada, provincial governments, universities and private corporations and associations. Information on these projects was obtained during the period from September 1987 to February 1990. The database includes active research and development projects and projects which have been completed within the last three years.

Currently, the entire database is developed on Micro-Questel software, running on an AT computer, using an MS-DOS v. 3.3 operating system with a 1.2 MB floppy drive, a minimum RAM of 512K bytes and a minimum storage capacity of 7M bytes. Data can be transferred by diskette, in ASCII or flat files for uploading to compatible packages such as Questel or other database management systems. Consideration is being given to mounting the database on a nationally accessible mainframe system for subscription use.

This summary inventory is organized by environmental resource classification (land, air, water, human, waste, other). Names of Project Investigators are also listed separately, in alphabetical order, to facilitate review and contact within the Research Community.

The CCME Research Advisory Committee is interested in monitoring the demand, interest and use of the inventory both in its printed and computerized form. Please direct any comments or questions you may have on the database to:

Chris Banwell
National Data Coordinator, CCME R&D Inventory
Environment Canada, Conservation & Protection
Technology Development Branch – HQ
3439 River Road South
Ottawa, Ontario
K1A 0H3

Tel: (613) 991-1575 FAX: (613) 991-1634

The inventory was constructed from records submitted by a large number of organizations. While accuracy is a major interest, the CCME, Environment Canada and contributing organizations take no responsibility for discrepancies which may be present. Please direct information on errors, omissions or updates to the attention of the National Data Coordinator.

For additional copies of this publication, please contact:

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R3N 0H6

Tel: (204) 945-6695 FAX: (204) 945-6807

# INTRODUCTION

Voici la seconde édition de l'Inventaire national des projets de recherche et développement sur l'environnement. Publié par le Comité consultatif de la recherche du Conseil canadien des ministres de l'environnement (CCME), la première fois en octobre 1988, le document fournit des renseignements sommaires sur les projets de R-D sur l'environnement effectués au pays ou financés par des organismes gouvernementaux, des universités ou des organismes privés canadiens.

Il a comme objectif de dresser la liste complète de tous les grands projets de R-D sur l'environnement qui sont réalisés ou viennent de se terminer au pays. Ce bilan sert de référence principale au transfert des données de recherche sur le milieu, ce qui aide à réduire le double emploi et à tirer le maximum des fonds de recherche.

La base de données dont découle l'inventaire n'est autre que l'enregistrement détaillé de plus de 1 700 projets de recherche surtout financés par Environnement Canada, les provinces, les universités et des sociétés ou associations privées. Ces renseignements ont été obtenus entre septembre 1987 et février 1990. La base de données inclut les projets de R-D en cours et ceux qui ont pris fin ces trois dernières années.

Actuellement, toute la base de données est sur logiciel Micro-Questel exécuté sur ordinateur AT (système d'exploitation MS-DOS, (version 3.3), unité de disque souple de 1,2 méga-octet ainsi que mémoire vive minimum de 512 octets et capacité de mémoire d'au moins 7 méga-octets). Les données peuvent être transférées par disquette, au moyen du code ASCII ou de fichiers plats, en vue de leur téléchargement dans des logiciels compatibles comme Questel ou d'autres systèmes de gestion des bases de données. On envisage de monter la base sur une unité centrale accessible dans tout le pays, aux fins des abonnements.

Les données de l'inventaire sont classées selon la ressource (terre, air, eau, être humain, déchets, autres). Les noms des chargés de projets sont également donnés séparément, par ordre alphabétique, pour faciliter analyses et communications au sein de la communauté de recherche.

Le Comité consultatif de la recherche du CCME désire connaître la demande et l'utilisation de l'inventaire (support papier ou informatique), l'intérêt qu'on lui porte. Pour toute observation ou question sur la base de données, adressez-vous à:

Chris Banwell
Coordonnateur national des données, CCME, Inventaire de R-D
Environnement Canada, Conservation et Protection
Direction du développement technologique – AC
3439 River Road South
Ottawa (Ontario)
K1A 0H3

Tél: (613) 991-1575 Télécopieur: (613) 991-1634

L'inventaire a été constitué à partir d'enregistrements présentés par un grand nombre d'organismes. Bien que soucieux de l'exactitude, le CCME, Environnement Canada et les organismes participants ne sont pas responsables des incohérences des données. Veuillez donc faire part des erreurs, des omissions et des mises à jour au coordonnateur national.

Pour d'autres copies de la publication, communiquez avec le groupe suivant:

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139, avenue Tuxedo
Winnipeg (Manitoba)
R3N 0H6

Tél: (204) 945-6695 Télécopieur: (204) 945-6807

# KEY TO PROJECT DESCRIPTIONS

Explanations of each field title available for use are provided for your reference. Where information is missing in a project listing it was not provided by the agency responsible for data collection. Each project listed in this publication follows the format given below:

Project Investigator(s) – Surname and Initial, if there is a second investigator at the same address he/she follows.

Telephone Number – area code in brackets

Affiliation – three levels of affiliation are allowed

Project Title – printed in bold type

Project Objective – free text is allowed, when none was available it was noted.

FINANCING – up to five co-funding agencies may be listed.

TOTAL BUDGET – total funding amount from all agencies for duration of the project.

START – date project started, consisting of the year (four digits) and the month (two digits), month as 00 if unknown.

END – date project completed – same format as above, but if project has no estimated completion date it was left blank.

The computer database allows each project to use other fields on data entry in addition to the above. Those fields not used in this publication are as follows:

ACC – Account No./No de projet – this is a unique identifier (supplied by each data coordinator) which consists of eight alphanumeric characters. It is compulsory to identify the federal or provincial government.

IAN – Internal Agency No./Numéro interne – this is a unique identifier that each coordinator has the option of adding. Either numeric or alphanumeric is acceptable, examples: 234PL, PERD24102.

DAS – Update No./No de mise à jour – date of entry supplied by the software automatically the first time a project is entered, when updates to a project listing are done this date can be changed.

LA – Language/Langue – language used to complete input form

PIx – Project Investigator(s)/Charge(s) de projet
Surname and Initial/Nom et initiales – consists of surname first followed by one initial and a second investigator if at the same address. This field is part of the published format.

AFx – Affiliation – three levels of affiliation are allowed, this field is part of the published format.

ADx – Address/Adresse – five levels of address are allowed

TLx – Tel. No./No de tél. – of the Project Investigator(s), this field is part of the published format.

LAx – Language(s) Supported/Langue(s) utilisée(s) – language(s) used by project investigator

TI – Project Title/Titre du projet – No specific format is required because free text is allowed. This field is part of the published format.

OBJ – Project Objective/Objectif du projet – No specific format is required because free text is allowed. This field is part of the published format.

SPx – Sponsor Name/Nom de l'organisme subventionnaire and Abbreviation/Abréviation – full name of agency and abbreviation (no more than seven characters) to be supplied on input form. Up to five agencies are allowed, this field is part of the published format.

BUx – Amount/Montant – the full amount for the life of the project, including salaries from each corresponding SPx.

COx – Contact Name/Nom de la personne ressource – from each corresponding SPx.

CTx – Tel. No./No de tél. – for each corresponding COx.

BUA & FYB – Annual Budget for Fiscal Year/Budget annuel pour l'année financière – shown in two fields, an amount for the most relevant fiscal year.

BUT – Total Budget/Budget total – this amount is the total of all BUx amounts. This field is part of the published format.

PD – Project Duration/Durée du projet – a number to express the years required to complete the project. If the project has no definite duration, it is labelled ongoing.

DA1 – Date Project Started/Date du début du projet – consists of the year (four digits) and the month (two digits), with no space between them. This field is part of the published format.

DA2 – Date Project Completed/Date de la fin du projet – same format as DA1, if project has no estimated completion date it is left blank. This field is part of the published format.

NO – Comments/Commentaires – any further information on project funding in free text.

CLA – Classification Codes/Plan de classement – up to four codes can be entered, each consists of a four digit number (corresponding to the headings in the Table of Contents) and a capital letter for one of the five compulsory sub-codes.

**Keywords/*Mots-Clés***

IDN – Identifiers/Identificateurs – individual words or short phrases, place names (if relevant to the project) appear first.

DES – Descriptors/Descripteurs – words or phrases from the "Thesaurus of Environmental Terms", published by the United Nations Environment Programme (UNEP). There will be no place names in this field.

# CLÉ DES DESCRIPTIONS DE PROJET

Les explications de chaque titre de champ utilisable sont données pour votre gouverne. Lorsque des renseignements manquent dans un listage de projets, c'est qu'ils n'ont pas été fournis par l'organisme responsable de la collecte des données. Chaque projet listé dans cette publication est présenté dans la forme suivante:

Chargé(s) de projet – Nom de famille et initiale. S'il y a un second chargé de projet à la même adresse, son nom suit.

Numéro de téléphone – Indicatif régional entre parenthèses.

Affiliation – Trois niveaux d'affiliation sont permis.

Titre du projet – Imprimé en caractères gras.

Objectif du projet – Un texte libre est permis. Lorsqu'aucun texte n'est disponible, le fait est noté.

FINANCEMENT – Jusqu'à cinq organismes cofinanceurs peuvent être listés.

BUDGET TOTAL – Financement total de tous les organismes pour la durée du projet.

DÉBUT – Date de commencement du projet, comprenant l'année (quatre chiffres) et la mois (deux chiffres), le mois étant désigné 00 s'il est inconnu.

FIN – date d'achèvement du projet – Même présentation que ci-dessus, mais si la date d'achèvement n'est pas établie, laisser un espace en blanc.

La base de données permet d'utiliser d'autres champs que ceux qui précèdent pour l'introduction de données relatives à chaque projet. Les champs inutilisés dans cette publication sont les suivants:

ACC – N° de projet/Account No. – Identificateur unique (fourni par chaque coordonnateur de données) qui comprend huit caractères alphanumériques. Il est obligatoire d'identifier le gouvernement fédéral ou provincial.

IAN – Numéro interne/Internal Agency No. – Identificateur unique de chaque coordonnateur est libre d'ajouter. Les caractères numériques ou alphanumériques sont acceptables: par exemple, 234PL, PERD24102.

DAS – N° de mise à jour/Update No. – Le logiciel donne automatiquement la date d'introduction la première fois qu'un projet est inscrit. Lorsque des mises à jour sont apportées au listage des projets, cette date peut être changée.

LA – Langue/Language – Langue utilisée pour remplir le formulaire d'entrée.

PIx – Chargé(s) de projet/Project Investigator(s) – nom et initiale/Surname and Initial – comprend le nom de famille suivi d'une initiale et le nom d'un second chargé de projet s'il se trouve à la même adresse. Ce secteur fait partie de la présentation publiée.

AFx – Affiliation – Trois niveaux d'affiliation sont permis. Ce champ fait partie de la présentation publiée.

ADx – Adresse/Address – Cinq niveaux d'adresse sont permis.

TLx – N° de tél./Tel. No. – du (des) chargé(s) de projet – Ce secteur fait partie de la présentation publiée.

LAx – Langue(s) utilisée(s)/Language(s) Supported – Langue(s) utilisée(s) par le chargé de projet.

TI – Titre du projet/Project Title – Aucune présentation particulière n'est exigée, car un texte libre est permis. Ce champ fait partie de la présentation publiée.

OBJ – Objectif du projet/Project Objective – Aucune présentation particulière n'est exigée, car un texte libre est permis. Ce champ fait partie de la présentation publiée.

SPx – Nom de l'organisme subventionnaire/Sponsor Name et Abréviation/Abbreviation – Nom complet de l'organisme et abréviation (pas plus de sept caractères) à inscrire sur le formulaire d'entrée. Jusqu'à cinq organismes sont permis, et ce champ fait partie de la présentation publiée.

BUx – Montant/Amount – Montant complet pendant la durée du projet, y compris les salaires de chaque SPx correspondant.

COx – Nom de la personne-ressource/Contact Name – pour chaque SPx correspondant.

CTx – N° de tél./Tel. No. – pour chaque COx correspondant.

BUA & FYB – Budget annuel pour l'année financière/Annual Budget for Fiscal Year – figure dans deux champs, un montant pour l'année financière la plus pertinente.

BUT – Budget total/Total Budget – Ce montant est le total de tous les montants des BUx. Ce champ fait partie de la présentation publiée.

PD – Durée du projet/Project Duration – Nombre servant à exprimer les années nécessaires pour terminer le projet. Si le projet n'a pas de durée définie, il est désigné permanent.

DA1 – Date du début du projet/Date Project Started – comprend l'année (quatre chiffres) et le mois (deux chiffres) sans espace entre eux. Ce champ fait partie de la présentation publiée.

DA2 – Date de la fin du projet/Date Project Completed – Même présentation que DA1. Si le projet n'a pas de date d'achèvement estimée, laisser un espace en blanc. Ce champ fait partie de la présentation publiée.

NO – Commentaires/Comments – Tout renseignement complémentaire sur le projet sous forme de texte libre.

CLA – Plan de classement/Classification Codes – Jusqu'à quatre codes peuvent être introduits, chacun comprenant quatre chiffres (correspondant aux rubriques de la table des matières) et une majuscule pour chacun des cinq sous-codes obligatoires.

**Mots clés/*Keywords***

IDN – Identificateurs/Identifiers – Des mots particuliers ou de courtes expressions et des noms de lieu (s'ils sont utiles pour le projet) figurent d'abord.

DES – Descripteurs/Descriptors – Mots ou expressions du «Thesaurus des termes relatifs à l'environnement», publié par le Programme des Nations Unies pour l'environnement (PNUE). Aucun nom de lieu ne sera inscrit dans ce champ.

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# 01

## LAND

*SOL*

# GENERAL

# *GÉNÉRAL*

## 0100-1

Banting, D
(416) 979-5038
Applied Geography Department; Ryerson Polytechnical Institute

**Feasibility of a geographical information system for conservation authorities**

Analysis of data needs and use for a conservation authority in Southern Ontario. Interim report.

Financing/*Financement:* Social Sciences and Humanities Research Council

$4 000

**START/*DÉBUT***: *1985 10*

## 0100-2

Bégin, Y
(418) 656-5630
Université Laval; Centre d'études nordiques

**Dynamique des écosystèmes riverains du Nouveau-Brunswick**

Cette étude vise à reconstituer l'évolution récente du trait de côte en réponse à la transgression marine. On cherche à préciser les processus écologiques et géomorphologiques contribuant à la modification des écosystèmes riverains au cours des dernières décennies. La reconstitution du dynamisme des écosystèmes s'appuie sur l'analyse dendrochronologique des populations ligneuses affectées par la migration des cordons de plage, sur l'évaluation du taux d'érosion dans des milieux particulièrement exposés et sur l'étude écologique des marais littoraux.

Financing/*Financement:* Fonds interne de recherche, Université de Moncton

Fonds interne de recherche, Université Laval

$6 500

## 0100-3

Beveridge, T
(519) 824-4120
Department of Microbiology; University of Guelph

**Heavy metal immobilization by bacteria and their products: biomineralization**

To study the fundamental interactions of bacteria with soluble toxic heavy metal ions and the resulting biomineral which is formed.

Financing/*Financement:* Natural Sciences and Engineering Research Council

United States Environmental Protection Agency

## 0100-4

Brouillet, L
Bouchard, A
(514) 256-7511
Université de Montréal; Institut botanique

**Etudes sur les plantes vasculaires rares et menacées des tourbières du sud-ouest du Québec.**

But: Etablir le statut actuel des populations d'espèces rares des tourbières du sud-ouest du Québec, un habitat fortement menacé et les facteurs critiques qui pourraient jouer dans leur restriction. Objectifs: Déterminer les priorités de conservation pour ces espèces et les actions à mener pour les aménager, si nécessaire.

Financing/*Financement:* Fondation pour les espèces menacées du Québec

$7 600

**START/*DÉBUT***: *1987 06*

## 0100-5

Burn, C
(519) 679-2111
University of Western Ontario

**Investigations of permafrost and ground ice conditions, Northwest Canada**

To gain understanding of permafrost growth and decay; and behaviour of water in freezing soil.

Financing/*Financement:* Geological Survey of Canada

Imperial Oil Company

Natural Sciences & Engineering Research Council

## 0100-6

Divic, S
Hodson, M
(416) 979-5345
Ryerson Polytechnical Institute

**Production of a digital elevation model on Ryerson's Gestalt photo mapper**

Accuracy comparison of manually compiled contour lines and the Gestalts D.E.M. generated contour lines.

Financing/*Financement:* Ontario Ministry of Natural Resources

$15 000

**START/*DÉBUT***: *1987 09*

## 0100-7

Dusseault, M
(519) 885-1211

Department of Geological Engineering; University of Waterloo

**Geomechanical Investigation of the Origin and Properties of Near Surface Fractures in Clayey Tills**

1. To determine the distribution and properties of fractures in clayey glacial deposits. 2. To define possible processes by which fractures in clayey deposits were created. 3. To assess the geomechanical effects of clayey till fractures on the flow of leachate through the weathered zone.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$29 400

**START/*DÉBUT*:** *1984 09* **END/FIN:** *1986 09*

## 0100-8

Edgington, L
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effect of flooding and crop rotation on pathogens in muck**

To test the effects of flooding on the control of fungal diseases on muck soil crops (onions white rot, white mold, nematodes).

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$15 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0100-9

Eggens, J
(519) 824-4120

Department of Horticultural Science; University of Guelph

**Sewage Sludge Compost as Turf Fertilizer**

To evaluate the usefulness of sewage sludge compost as a replacement to milorganite as a fertilizer for golf course fairways as well as for other applications (home lawns, athletic fields, sod farms, etc.)

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$70 300

**START/*DÉBUT*:** *1985 08* **END/FIN:** *1990 03*

## 0100-10

Evans, R
(705) 748-1273

Environment & Resource Studies; Trent University

**Technical expertise to develop/apply sediment/soil bioassays**

none given

Financing/*Financement:* Ontario Ministry of Environment

$53 685

**START/*DÉBUT*:** *1988 04*

## 0100-11

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Pesticide container disposal site assessment project**

The ultimate objective of the project was to ensure the continuing integrity of the pesticide container collection sites across the province. The specific objectives were to determine the extent of contamination and examine the physical characteristics and operational practices of each site. Summary report is available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$45 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1987 01*

## 0100-12

Filion, L
(418) 656-3340

Université Laval; Centre d'études nordiques

**Dynamique des systèmes éoliens du Québec.**

Ce programme de recherche se rapporte à la dynamique des systèmes éoliens abordée dans la perspective d'une évolution à long terme (Holocène) et à court terme (actuelle). Etablissement de la chronologie éolienne et interprétation paléoclimatique du développement des dunes dans le contexte nord-américain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$63 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1988 03*

## 0100-13

Hall, J
(519) 824-4120

University of Guelph; Department of Environmental Biology

**Quantification of Herbicides in Soil, Water and Plants Using Enzyme-Linked Immunosorbent Assay**

The development of an enzyme linked immunosorbent assay (ELISA) for the deteciton of trace levels of herbicides in soil, water and plants.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$66 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1989 06*

## 0100-14

Harrison, J
(306) 780-6465

Environment Canada; Conservation and Protection; Environmental Protection

**Fertilizer study**

To measure the incremental increase in heavy metals in agricultural land caused by the application of fertilizers. Project is in the final write-up stage.

Financing/*Financement:* Environment Canada, Conservation and Protection

$10 000
**START/*DÉBUT*:** *1983 06* **END/*FIN*:** *1985 03*

## 0100-15

Hirst, J
Page, J
(613) 545-6588
Queen's University; Chemistry Department

**Development of centre for environmental studies, University of Ibadan, Nigeria**

none available

Financing/*Financement:* Canadian International Development Agency
$308 309
**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1990 03*

## 0100-16

Hwang, S
(403) 632-6761
Alberta Environmental Centre

**Disease management in forage and special crops**

To study etiology and epidemiology of diseases, develop and screen disease-resistant lines and develop integrated control measures for - economically important forage and special crops. Results published in scientific journals and the Pesticide Research Report, Agriculture Canada.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1980 01*

## 0100-17

Johnson, R
James, W
(403) 632-6761
Alberta Environmental Centre

**Inventions and methods in soil science and land reclamation**

To develop requirements, instrumentation and methods for research and monitoring in soil science and land reclamation. Reports and papers available on: automated root washer, computerized root image analysis system, cone penetrometer for soil compaction, hydraulic conductivity cell, method for extracting oil from soils and soil grinding machine.

Financing/*Financement:* Alberta Environmental Centre
Alberta Environment
Alberta Heritage Savings Trust Fund
$250 000
**START/*DÉBUT*:** *1983 09*

## 0100-18

Kharbanda, P
(403) 632-6761
Alberta Environmental Centre

**Disease management in oilseed crops**

To investigate upon occurence, spread, yield losses caused by and control of economically important diseases of oilseed crops in northeastern Alberta employing ecologically compatible and environmentally safe techiques with emphasis on integrated disease management.

Financing/*Financement:* Alberta Environmental Centre

## 0100-19

Kharbanda, P
(403) 632-6761
Alberta Environmental Centre

**Disease management in cereal crops**

To investigate upon occurrence, spread, yield losses caused by, and control of economically important diseases of cereals in northeastern Alberta employing ecologically compatible and environmentally safe techniques with an emphasis on integrated disease management. Results published in scientific journals and the Pesticide Research Report of Agriculture Canada.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1981 01*

## 0100-20

LaRoi, G
(403) 492-4163
Botany Department; University of Alberta

**Boreal forest stand dynamics in central Alberta**

To study the plant community and population dynamics of 8 boreal forest ecosystems representing 3 major habitat types in which important environmental factors are also monitored. Jointly with Dr. Michael S. Ross.

Financing/*Financement:* Alberta Environment Employment Program
Environment Canada, Conservation & Protection
Alberta Environment Research Trust
Alberta Environment
$298 038
**START/*DÉBUT*:** *1982 01*

## 0100-21

Martin, R
(519) 679-2111
University of Western Ontario; Department of Chemistry

**Secondary ion mass spectrometry of coal**

To investigate element distribution in coal and possible environmental impacts.

Financing/*Financement:* Energy, Mines and Resources Canada

## 0100-22

McCaughey, J
(613) 545-6035
Geography; Queen's University

**Energy and radiation balance studies on mature and thinned forests and logged areas**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$49 620
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0100-23

McKean, C
not available
University of Victoria

**Physical and chemical description of limnetic sediments from Langford Lake, South Vancouver Island**

To document the physical and chemical composition of the recent and holocene sediments as they relate to the influence of climate in the geology and geomorphology of the drainage basin.

Financing/*Financement:* British Columbia Ministry of Environment & Parks
$40 200
**START/*DÉBUT***: *1982 05* ***END/FIN***: *1987 12*

## 0100-24

Middleton, J
(416) 688-5550
Institute of Urban and Environmental Studies; Brock University

**Stress and disturbance in ecosystems dominated by human activity**

To quantify measures of ecosystem stress and disturbance; to integrate human with non-human effects in a single framework.

Financing/*Financement:* Natural Sciences and Engineering Research Council
$33 000
**START/*DÉBUT***: *1986 04*

## 0100-25

Nikiforuk, W
(403) 438-7518
Alberta Research Council; Terrain Sciences Dept.

**Soil survey of the County of St. Paul, Alberta**

Map the soil resources (at a scale of 1:50, 000) of the County of St. Paul, Alberta.

Financing/*Financement:* Alberta Agriculture
Agriculture Canada
Alberta Research Council
$359 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1991 03*

## 0100-26

Pastorek, L
(416) 235-5855
Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Microwave Digestion of Vegetation and Soil Samples**

To develop a routine sample preparation method using a microwave oven to replace present ashing and acid extraction system.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch
$23 000
**START/*DÉBUT***: *1986 11*

## 0100-27

Pastorek, L
(416) 235-5855
Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Applicaton of Robotics to Digestion of Vegetation and Soil Samples for Analysis of Metals**

To apply a robotic system to a microwave digestion technique used for vegetation and soil sample preparation for metal analysis.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch
$46 000
**START/*DÉBUT***: *1987 05*

## 0100-28

Punt, M
(613) 991-1840
Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Removal of PCBs from soil**

In house study now complete. New techniques now becoming available will be investigated in future.

Financing/*Financement:* Environment Canada, Conservation and Protection
$5 000
**START/*DÉBUT***: *1986 11* ***END/FIN***: *ongoing*

## 0100-29

Qadeer, M
(613) 545-2188
School of Urban and Regional Planning; Queen's University

**Ruralopolis: structural adjustment processes in a high density rural region**

unavailable
Financing/*Financement:* Queen's University
$3 020
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0100-30

Roberts, T
(403) 329-5322
Alberta Environment

**Seasonal fluctuations in soil pH**

Documented the relative importance of seasonal variations in soil chemical properties as an aid to identifying long term acidification. A statistical model was developed that considers the implications of spatial and temporal variation for

the process of monitoring for soil acidification. (Report available from Earth Sciences Division, Alberta Environment).

Financing/*Financement:* Alberta Environment

$276 700

**START/*DÉBUT*:** *1983* **END/FIN:** *1987 03*

## 0100-31

Roberts, T
(403) 329-5322
Alberta Environment

**Long-term measurement of the acidification of non-cultivated soils in Alberta**

Eight monitoring sites have been established to measure the acidification of soils over a long period of time in areas where deposition of industrial acid precursors is expected. They are intended to measure the worst situations, hence they will act as soil acidification early warning sites.

Financing/*Financement:* Alberta Environment

$3 400 000

**START/*DÉBUT*:** *1981*

## 0100-32

Rutherford, G
(613) 545-6032
Geography; Queen's University

**Pedogenesis of soils formed on basalt**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$43 800

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 03*

## 0100-33

Rutherford, G
(613) 545-6032
Geography; Queen's University

**Soils of the Norse settlements on Greenland**

unavailable

Financing/*Financement:* North Atlantic Treaty Organization

$10 000

**START/*DÉBUT*:** *1987* **END/FIN:** *1988 00*

## 0100-34

Séguin, M
Azzaria, L-M
(418) 656-2196
Université Laval; Département de géologie

**Etudes géochimiques dans la prévision des tremblements de terre, région de Charlevoix.**

Prévision temporelle et spatiale des tremblements de terre (TT) de la région de Charlevoix. La prévision des TT par l'analyse du mercure dans l'air et de la salinité de l'eau (trou de forage) donne des indices à court terme: une plus grande concentration de mercure le long de failles connues indique que la distribution du contenu en mercure du sol près de la surface (corrigée pour des couches absorbantes) est de fait un prédicteur spatial des TT.

Financing/*Financement:* Canada, ministère de l'Energie, des Mines et des Ressources

$5 000

**START/*DÉBUT*:** *1988* **END/FIN:** *1989 03*

## 0100-35

Stephenson, G
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Fate of sulfonylurea herbicides in Ontario**

To compare activity and mobility of chlorsulfuron, metsulfuron methyl and sulfometuron methyl in typical Ontario soil (lab and growth room study). Examine persistence and leaching of clorsulfuron (Glean) on rough turf at maximum rates for non-crop land weed control.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$31 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0100-36

Thacker, D
(403) 632-6761
Alberta Environmental Centre

**Weathering of soils and spoils**

To evaluate the long term consequences of exposing geological materials on land surfaces near the Rocky Mountains where land reclamation and surface water management necessitate control over the chemical and physical environment. The final report is available and one scientific paper.

Financing/*Financement:* Alberta Environmental Centre
Luscar Ltd.

$60 000

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1987 06*

## 0100-37

Van Loan, G
(613) 545-2633
Chemistry; Queen's University

**Studies of carbohydrates in soil under acid rain conditions**

unavailable

Financing/*Financement:* Queen's University

$3 100

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0100-38

Westworth, D
Brusnyk, L
(403) 462-0872
D.A. Westworth & Associates Ltd.

**Ungulate monitoring studies in the Obed Marsh thermal coal project area**

To evaluate the effectiveness of wildlife underpasses in allowing ungulate movements across the access corridor, and to develop a monitoring system suitable for documenting ungulate crossings. Final report available.

Financing/*Financement:* Obed Mountain Coal Company Limited

**START/*DÉBUT***: *1983 10* **END/*FIN***: *1987 04*

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## 0100-39

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Assessment of soil acidification potentials**

To determine relative acidification potentials of a range of B.C. soils using several laboratory methods, to allow comparisons with and evaluation of sensitivity ratings by other methods.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

**START/*DÉBUT***: *1985*

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## 0100-40

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Trace metal extractions from soils in relation to air emissions monitoring**

To determine extractable metals in various soils in the area of a large refuse incinerator using several methods to monitor accumulations in soil and relate soil levels to vegetation levels.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

Greater Vancouver Regional District

**START/*DÉBUT***: *1987 04*

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## 0100-41

Wilson, K
(613) 545-2137

Civil Engineering; Queen's University

**Analytic modelling of non-newtonian particulate slurries, with applications in pipeline transport**

Also applications to mine waste disposal and investigation of debris flows.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$19 650

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

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## 0100-42

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Nitrogen status, fixation and cycling on barren and revegetated Sudbury soils**

To determine the nitrogen status of barren and revegetated barren land; to determine to what extent soil nitrogen status is limiting vegetation development on revegetated land; to determine to what extent nitrogen fixation is occurring on barren and revegetated land; to determine the best means of enhancing nitrogen fixation, both symbiotic and non-symbiotic, on revegetated land. Interim report available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$50 000

**START/*DÉBUT***: *1986 06*

# LAND ECOSYSTEMS

# *ÉCOSYSTÈMES TERRESTRES*

## 0101-1

Abouguendia, Z
(306) 933-8185
Saskatchewan Research Council

**Effects of drilling wastes on agricultural land**

To evaluate the effect of land application of drilling wastes from Sask. oilfields on soils and crops. Report will be available in April 1988.

Financing/*Financement:* Saskatchewan Energy and Mines
Energy Mines and Resources Canada
Saskatchewan Research Council
$188 000
**START/*DÉBUT***: *1985 02* **END/*FIN***: *1988 03*

## 0101-2

Abouguendia, Z
(306) 933-5400
Saskatchewan Research Council

**Evaluation of the sensitivity of Sask. forest vegetation and field crops to acidic precipitation**

A bench scale study was established to determine the level of acidity at which damage would occur. A report is available from Sask. Environment and Public Safety and the Sask. Research Council.

Financing/*Financement:* Saskatchewan Environment and Public Safety
Saskatchewan Power Corporation
$40 000
**START/*DÉBUT***: *1985 06* **END/*FIN***: *1987 03*

## 0101-3

Adam, C
(306) 584-9564
Private Consultant

**Nomination report for Athabasca Sand Dunes (Saskatchewan) ecological reserves**

To delineate and justify sites within the Saskatchewan Athabasca Sand Dunes which would make suitable ecological reserves.

Financing/*Financement:* Saskatchewan Environment and Public Safety
$7 500

## 0101-4

Albert, P
(514) 848-3422
Université Concordia; Département de biologie

**Chemosensory bases of host-plant selection in insects.**

Identifier les mécanismes responsables pour la sélection de la plante-hôte par la tordeuse des bourgeons de l'épinette. Comportement. Electrophysiologie. Organes sensoriels.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
$54 231
**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0101-5

Alikhan, M
Pani, A
(705) 675-1151
Laurentian University; Biology

**Uptake and accumulation of magnesium and manganese in terrestrial crustacea**

To determine the effect of magnesium and manganese accumulation on oxygen and nitrogen metabolism in terrestrial crustacea. M.Sc. Thesis available

Financing/*Financement:* Natural Sciences and Engineering Research Council
$21 100
**START/*DÉBUT***: *1985 09* **END/*FIN***: *1987 08*

## 0101-6

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Phytochemically mediated interactions in plant insect relations**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council
$74 994
**START/*DÉBUT***: *1989 04* **END/*FIN***: *1992 03*

## 0101-7

Bardecki, M
(416) 979-5038
Ryerson Polytechnical Institute

**Application of three alternate methods of assessing wetland value to Greenock Swamp, Ontario**

Report available from M. Bardecki.

Financing/*Financement:* Canadian Wildlife Service
$18 700
**START/*DÉBUT***: *1988 03* **END/*FIN***: *1988 10*

## 0101-8

Bardecki, M
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Evalution of Ontario wetland mapping series**

Analysis of map accuracy.

Financing/*Financement:* Social Sciences and Humanities Research Council

$1 506

**START/*DÉBUT*:** *1988 01*

## 0101-9

Barrington, S
Madramootoo, C
(514) 398-7776

Collège MacDonald; Département de génie rural

**Les bandes riveraines servant à l'épuration des sources de pollutions diffuses agricoles.**

Vérifier l'effet de la largeur de bandes riveraines en bordure de cours d'eau sur la qualité des eaux de ruissellement s'y drainant directement.

Financing/*Financement:* Union des producteurs agricoles Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Canada, ministère de l'Agriculture

$50 000

## 0101-10

Beckett, P
(705) 675-1151

Laurentian University; Biology

**Effects of contaminants on mosses and lichens**

Detection of short and long-term changes in the moss and lichen flora of NE Ontario ecosystems as affected by contaminants. Effects of metals on moss and lichen physiology. Report available.

Financing/*Financement:* Laurentian University Research Fund

$7 000

**START/*DÉBUT*:** *1979*

## 0101-11

Beckett, P
Courtin, G
(705) 675-1151

Laurentian University; Biology

**Remote sensing and geobotany as an aid to mineral exploration in northern terrains**

To understand the geochemical & biochemical processes involved in the release & uptake of various metals from bedrock & overburden into the various tissues of vascular (trees & shrubs) & nonvascular (lichen, mosses & fungi) plants. Interim reports available.

Financing/*Financement:* Ontario Geological Survey Centre in Mining & Mineral Exploration

$138 150

**START/*DÉBUT*:** *1986 01*

## 0101-12

Bégin, Y
(418) 656-5630

Université Laval; Centre d'études nordiques

**Variations du niveau des grands lacs du Québec nordique**

L'objectif principal de cette recherche est de reconstituer les oscillations décennales et séculaires des grands lacs localisés le long du gradient bioclimatique marquant le passage de la forêt boréale à la toundra. L'hypothèse générale à valider stipule que les oscillations de l'ensemble des grands lacs répondent à des changements majeurs dans le régime pluvio-thermique caractérisant les climats des régions boréales et subarctique. La reconstitution du dynamisme du système riverain des lacs s'appuie sur l'observation des processus littoraux saisonniers et sur l'analyse dendrochronologique et l'étude des populations végétales.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0101-13

Beltaos, S
(416) 336-4898

Rivers Research Branch; National Water Research Institute; Environment Canada

**Ice jams and floods**

To develop new knowledge on ice jamming processes and build predictive models for improved ice management capabilities.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 020 000

**START/*DÉBUT*:** *1979 07* **END/*FIN*:** *1991 07*

## 0101-14

Bergeron, Y
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Elaboration de critères permettant d'évaluer le seepage dans les écosystèmes forestiers.**

Evaluer le phénomène du seepage et son effet sur la composition et la productivité forestière. Etudier les interrelations entre les différents indicateurs topographique, pédologique et biologique, du phénomène de seepage. Quantifier le phénomène de seepage à l'aide d'une série d'indicateurs et produire une clef d'identification des classes qui soit utilisable dans les conditions de terrain.

Financing/*Financement:* Québec, ministère de l'Environnement

$70 200

**START/*DÉBUT*:** *1988 06* **END/*FIN*:** *1991 03*

## 0101-15

Bergeron, Y
Simon, J-P
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Effets du régime des feux sur la distribution, la dynamique et la structure génétique des populations d'arbres.**

Etablir le régime des feux (fréquence, étendue, sévérité) d'une portion de la forêt boréale abitibienne. Evaluer les facteurs qui contrôlent le régime des feux (climat, topographie, âge, et type de forêts). Evaluer les effets du régime de feu sur la distribution et la dynamique des espèces arborescentes. Evaluer l'effet du régime de feu sur la structuration génétique des populations.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Conseil de recherche en sciences naturelles et en génie

$78 000

**START/*DÉBUT***: *1986* **END/*FIN***: *1988*

## 0101-16

Borstad, G
(604) 656-5633

G.A. Borstad Associates Ltd.

**Compact airborne spectrographic imager (CASI) - software and applications development**

Development of software for the CASI; calibration, analysis and image processing. Development of applications, demonstration projects.

Financing/*Financement:* Itres Research Ltd.

GA Borstad Associates Ltd.

## 0101-17

Bouchard, M
Peloquin, S
(514) 343-7542

Université de Montréal; Département de géologie

**Evaluation des effets de la géochimie des sédiments de surface sur le dépérissement des érablières des Cantons de l'Est**

Compiler et réanalyser, le cas échéant, les résultats de l'analyse de 800 à 1000 échantillons de sédiments pour Al-Ca-Mg-Fe-Na-K-Li-Sa-Ba, et Cr-Ni-Co-Cu-Zn-V-Se-Pb-As-Cd. Comparer ces résultats avec le relevé du niveau de dépérissement établi par Environnement Québec; évaluer la présence ou non d'une ou de plusieurs corrélations.

Financing/*Financement:* Commission géologique du Canada

$32 000 **END/*FIN***: *1988 03*

## 0101-18

Boutin, S
(403) 492-7544

Department of Zoology; University of Alberta

**Experimental analysis of factors affecting mammalian population dynamics**

To test hypotheses concerning population regulation. Information available in journal publications.

Financing/*Financement:* Natural Sciences and Engineering Council

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 04*

## 0101-19

Camiré, C
(418) 656-7773

Université Laval; Département des sciences forestières

**Confection de clés d'identification des classes de drainage pour l'Abitibi-Témiscamingue**

Trois clés pratiques, d'identification des classes de drainage, seront construites à partir de descripteurs de la flore, du milieu ou mixtes, choisis pour leur facilité d'identification au champ. L'application de méthodes statistiques multivariées permettra de cerner les relations entre les classes de drainage et les descripteurs, et de hiérarchiser les descripteurs selon leur pouvoir discriminant. Les clés devront être vérifiées au champ.

Financing/*Financement:* Québec, ministère de l'Environnement

$78 000

**START/*DÉBUT***: *1988 06* **END/*FIN***: *1990 03*

## 0101-20

Camiré, C
(418) 656-7773

Université Laval; Département des sciences forestières

**Cycle de N et de S dans des érablières saines et dépérissantes**

Connaître l'impact des dépôts atmosphériques acides ($H_2SO_4$ et $HNO_3$) sur les sols des érablières et modéliser le devenir de ces éléments dans le cycle biogéochimique.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$30 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0101-21

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Modèle biogéochimique de la dynamique du soufre dans un écosystème boréal (Lac Laflamme, Forêt Montmorency).**

Production d'un modèle biogéochimique de la dynamique du soufre dans un écosystème recevant des précipitations acides. Quantification des principaux réservoirs de soufre dans la végétation terrestre, les sols, les sédiments et les eaux. Identification des principales formes chimiques. Mesure des flux de soufre entre les réservoirs biotiques et abiotiques. Formulation d'un modèle mathématique d'entrée-sortie du soufre dans un écosystème boréal.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$45 000

## 0101-22

Cooke, F
(613) 545-6129
Biology; Queen's University

**The role of variable environments in annual estimates of breeding success for lesser snow geese**

unavailable

Financing/*Financement:* Environment Canada, Conservation & Protection

$1 750

**START/*DÉBUT*:** *1987* **END/*FIN*:** *1988 00*

## 0101-23

Crowder, A
(613) 545-6139
Biology; Queen's University

**Metal uptake and ecology of wetland roots**

unavailable

Financing/*Financement:* Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1992 03*

## 0101-24

Cumming, H
(807) 343-8280
Lakehead University; School of Forestry

**Use of moose corridor leave strips by moose**

To determine the impact of forest operations on wildlife and how effective are the steps taken to try to mitigate the negative impact of these operations. A final report will be submitted.

Financing/*Financement:* Ontario Ministry of Natural Resources

$38 295

**START/*DÉBUT*:** *1986 04*

## 0101-25

Dale, M
John, E
(403) 492-3484
Botany Department; University of Alberta

**Ecological study of spatial patterning in a saxicolous lichen community in Jasper National Park**

To investigate the structure and organization of a simple plant community and to relate patterns found to measured variables, both biotic and abiotic. Report (Ph.D) to be completed in Spring 1988.

Financing/*Financement:* Alberta Environment Research Trust

$9 500

**START/*DÉBUT*:** *1986 06*

## 0101-26

Danielson, R
(403) 220-5264
Kananaskis Centre for Environmental Research; University of Calgary

**Inoculation technology study**

To develop and test methods suitable for large scale inoculations of container-grown white spruce and lodgepole pine with 'difficult to inoculate' mycorrhizal fungi. Reports available.

Financing/*Financement:* Alberta Forest Service

$9 789

**START/*DÉBUT*:** *1986 07* **END/*FIN*:** *1988 01*

## 0101-27

De Oliveira, D
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Effets des traitements insecticides appliqués au fraisier en fleurs sur les pollinisateurs et la production.**

1) Déterminer l'impact de divers insecticides utilisés contre la punaise terne et l'anthonome de la fleur du fraisier sur les pollinisateurs (insectes non-cibles) et le rendement de la culture. 2) Vérifier l'hypothèse selon laquelle les effets sublétaux des insecticides chez les abeilles les éloignent ou les rendent moins efficaces dans la pollinisation. 3) Développer un programme de protection du fraisier qui respecte les insectes pollinisateurs et tient compte des ravageurs-clés.

Financing/*Financement:* Fonds institutionnel de recherche

$4 500

## 0101-28

De Oliveira, D
Mauffette, Y
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Impact de la défoliation sur l'allocation des ressources et la biomasse chez la pomme de terre (solanum tuberosum L.)**

1) Estimer le seuil de tolérance de la pomme de terre à la défoliation. 2) Déterminer les patrons d'allocation des ressources et de la biomasse chez la pomme de terre soumise à différents niveaux de défoliation. 3) Construire un modèle de la croissance et de la productivité de la pomme de terre en vue de simuler les impacts de la défoliation sur l'allocation des ressources et la biomasse. 4) A moyen terme: diminution d'insecticides contre le doryphore ce qui se traduit par une protection accrue de l'environnement et une diminution du rapport coûts/production. 5) A long terme: mise en place d'un système de lutte intégrée contre les défoliateurs de la pomme de terre tout en assurant une production soutenue.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

$31 125

**START/*DÉBUT*:** *1988* **END/*FIN*:** *1989*

## 0101-29

Denford, K
Zbigniewicz, M
(403) 492-3484

Botany Department; University of Alberta

**Shrub recolonization patterns in disturbed areas of the Rocky Mountain foothills.**

The object of this project is to examine the development of spatial pattern during natural shrub recolonization of disturbed areas in the Rocky Mountain foothills.

Financing/*Financement:* Alberta Environment Research Trust

**START/*DÉBUT***: *1987 05*

## 0101-30

Désy, J
Gauthier, M
(418) 545-5346

Université du Québec à Chicoutimi; Département des sciences humaines

**FORESPOIR: Dégradation et revalorisation des espaces forestiers au Québec: le cas de la Sagamie.**

Le présent projet se veut une contribution multidisciplinaire et globale à certaines questions cruciales que pose l'état de notre forêt et son mode de gestion, passé et actuel, tout en proposant quelques solutions d'avenir pour en faire un riche patrimoine collectif: valorisation de la biomasse forestière résiduelle; récupération des bois noyés; stratégies coopératives communautaires; profils de formation alternative en foresterie; état et utilisation potentielle de la forêt; passif environnemental des premiers gestionnaires de la forêt.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation UQAC

Coopérative forestière de Girardville

$130 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

## 0101-31

Dionne, J-C
(418) 656-5879

Université Laval; Centre d'études nordiques

**Evolution des rives du Saint-Laurent: érosion et sédimentation**

Mettre en évidence les zones subissant de l'érosion; connaître les mécanismes et les causes de l'érosion; déterminer les processus et le taux de sédimentation sur les rivages; obtenir une connaissance adéquate des rivages en vue de leur protection et d'une saine gestion et utilisation.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

**START/*DÉBUT***: *1982*

## 0101-32

Dionne, J-C
(418) 656-5879

Université Laval; Centre d'études nordiques

**Les fluctuations du niveau marin dans l'estuaire du Saint-Laurent**

Connaître les variations du niveau dans le Saint-Laurent estuarien de nos jours et durant tout l'Holocène, afin de mieux comprendre l'environnement et les processus.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$25 000

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1989 05*

## 0101-33

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Télé-interprétation des glissements pelliculaires du Parc de la Vallée de la Jacques-Cartier.**

Inventorier les glissements pelliculaires, les distinguer d'autres mouvements de masse, en établir les causes et définir des mesures de mitigation. Rapport disponible.

Financing/*Financement:* Québec, ministère du Loisir, de la Chasse et de la Pêche

$4 900

**START/*DÉBUT***: *1988* **END/*FIN***: *1989 04*

## 0101-34

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Télé-interprétation et dénombrement de colonies actives de castors.**

Etablir une méthode de télé-interprétation des critères d'identification des colonies de castors avec des photographies aériennes au 1:15000. Etablir un facteur de correction entre l'interprétation de photographies d'été et des inventaires d'automne faits en hélicoptère. Rapport disponible.

Financing/*Financement:* Environment Canada Parks

Sources diverses

$30 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1990 04*

## 0101-35

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Evaluation de la dégradation de la couverture végétale en zones récréatives par télé-interprétation.**

Etablir une méthode de télé-interprétation du suivi de la dégradation de la couverture végétale des zones récréatives à partir de l'analyse de photographies aériennes, de façon analogique et numérique. Rapport disponible.

Financing/*Financement:* Environment Canada Parks

Sources diverses

$30 000

**START/*DÉBUT***: *1988* **END/*FIN***: *1991 04*

## 0101-36

Duerden, F
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Land resource atlas for council for Yukon Indians**

Preparation of a resource atlas for native land claims in the Yukon. Atlas completed.

Financing/*Financement:* Donner Canadian Foundation

$126 000

**START/*DÉBUT***: *1982 05* ***END/FIN***: *1984 12*

## 0101-37

Dumouchel, A
(514) 697-3273

Eco-Recherches (Canada) Inc.

**Développement d'une approche écotoxicologique pour l'épandage ou l'entreposage de résidus en milieu terrestre.**

Ce projet s'adresse au milieu terrestre. Il vise à développer une approche permettant d'évaluer l'état de stress de la microflore édaphique suite à l'épandage de substances altéragènes sur un sol. L'usage de tels bio-indicateurs par les intervenants du secteur agricole par exemple permettrait d'évaluer les dangers associés à l'épandage des pesticides ou des boues résiduaires municipales industrielles ou agricoles (lisiers). La détermination de la charge énergétique en nucléotides adelynates (CEA) sera utilsée comme bio-indicateur de l'état de stress de la microflore édaphique. Le succès de ce projet doterait les organismes responsables d'un outil pour évaluer la réaction des écosystèmes terrestres à différentes charges polluantes.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, Approvisionnement et Services, Environnement

$230 000

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1989 12*

## 0101-38

Ellis, C
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Winter survival and economic thresholds for corn rootworms in field corn**

To determine the over-winter survival of root worm eggs; to determimine the relationship between late fall populations of beetles and damage to corn in the year following.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$18 600

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0101-39

Fessenden, R
(403) 438-0555

Alberta Research Council

**Soil sensitivity mapping**

Prepare maps of Alberta at 1:2, 000, 000 scale depicting the distribution of soils relative to sensitivity to acid deposition and potential to neutralize acid deposition. Approximately 400 unique map units have been identified, decribed and interpreted. (Soil maps and Report available from Alberta Research Council).

Financing/*Financement:* Alberta Environment

$80 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1985 03*

## 0101-40

Filion, L
(418) 656-3340

Université Laval; Centre d'études nordiques

**Analyse dendrochronologique des glissements de terrain de la vallée de la rivière du Gouffre.**

Etudier la croissance des arbres impliqués dans les glissements de terrain qui se sont produits au cours des 600 dernières années. Dater les glissements par la méthode dendrochronologique et déterminer la combinaison de facteurs susceptibles de causer ces mouvements de masse.

Financing/*Financement:* Canada, ministère de l'Energie, des Mines et des Ressources

$24 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1989 03*

## 0101-41

Filion, L
(418) 656-3340

Université Laval; Centre d'études nordiques

**Dynamique des systèmes éoliens du Québec.**

Ce programme de recherche se rapporte à la dynamique des systèmes éoliens abordée dans la perspective d'une évolution à long terme (Holocène) et à court terme (actuelle). Etablissement de la chronologie éolienne et interprétation paléoclimatique du développement des dunes dans le contexte nord-américain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$63 000

**START/*DÉBUT***: *1985* ***END/FIN***: *1988 03*

## 0101-42

Filion, L
Payette, S
(418) 656-3340

Université Laval; Centre d'études nordiques

**Analyse démographique et dendrochronologique des populations forestières dans les réserves écologiques de Tantaré et du Mont Mégantic.**

A Tantaré, une érablière à bouleau jaune est étudiée en détail du point de vue démographique dans le but d'établir les modalités de remplacement des deux espèces en présence (érable à sucre et bouleau jaune). L'analyse dendrochronologique permet d'étudier le pattern de croissance des arbres et de dégager l'influence des facteurs endogènes et exogènes sur la croissance radiale. Le même genre

d'étude est effectué au Mont Mégantic, dans une sapinière à bouleau blanc.

Financing/*Financement:* Québec, ministère de l'Environnement

Fondation Ecotam

$80 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1989 03*

## 0101-43

Fraser, A
(416) 336-4919

Rivers Research Branch; National Water Research Institute; Environment Canada

**Aquatic/terrestrial interactions and LRTAP resources at risk**

To determine the degree of aquatic resources at risk in provinces of Canada, participating in the development of the 1989/90 LRTAP assessment report for the RMCC. To extend the range and scope of the expert systems development of the RAISON system beyond LRTAP to environmental issues in Canada.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$300 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1990 03*

## 0101-44

Gagnon, G
Roy, G
(418) 643-7994

Ministère l'Energie et Ressources; Service de recherche appliquée

**Dépérissement et mortalité dans les érablières.**

Définit le lien existant entre les critères écologiques et végétatifs et le taux de dépérissement. Précise les facteurs (stress) prédisposants et déclenchants responsables du dépérissement et de la mort de nombreux érables. Propose des solutions au problème du dépérissement. Cette étude pourra également mieux adapter les techniques d'aménagement aux divers types d'érablières et de prévenir ainsi tout dépérissement futur en diminuant les stress subis par le milieu. Rapport disponible: oui

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$144 300

## 0101-45

Genest, C
(819) 376-5099

Université du Québec à Trois-Rivières; Laboratoire de géomorphologie

**Aspect géographique de la dégradation des sols forestiers par l'homme, le cas de la moyenne Mauricie: nature et étendue du problème.**

Classifier les types de dégradations que l'homme cause au sol par les types de coupes forestières; identifier les milieux sensibles et les cartographier; produire une banque de données pour les gestionnaires et les intervenants en milieu forestier; contribuer à la relance écologique de la forêt du Québec; et augmenter son rendement économique. Stade actuel de la recherche: demande de financement.

Financing/*Financement:* Conseil de recherches en sciences humaines

Fonds institutionnel de recherche

$5 050

## 0101-46

Gingras, J
Tourneur, J-C
(514) 282-3349

Université du Québec à Montréal; Département des sciences biologiques

**Etude éco-éthologique du perce-oreille (Forticula auricularia, Dermaptera: Forficulidae).**

Déterminer les conditions environnementales nécessaires au développement de l'espèce au Québec. Elaborer des modes de contrôle des populations.

Financing/*Financement:* Fonds institutionnel de recherche

Fondation UQAM

Ciba-Geigy

$20 470

**START/*DÉBUT***: *1986*

## 0101-47

Grace, J
(416) 978-5755

University of Toronto; Faculty of Forestry

**Behavioural ecology of the eastern subterranean termite in Ontario as a basis for control**

To describe the population demographics and foraging ecology of the eastern subterranean termite, Reticulitermes flavipes (Kollar), in southern Ontario by a systematic examination of colony growth and development, foraging patterns, intercolony interactions, chemically-mediated interactions with vegetation and fungi, and the effect of microclimate on colony development and foraging activities. Output: Grace, J.K., A. Abdallay. 1989. Evaluation of the dye marker Sudan Red 7B with Reticulitermes flavipes (Isoptera: Rhinotermitidae). Sociobioloy 15:71-77. In press: Grace, J.K. Northern subterranean termites. Pest Management. See the OMOE's Inventory of R&D Projects 1989 for more listings.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$194 700

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1992 03*

## 0101-48

Grandner, M
Villeneuve, N
(418) 656-2838

Université Laval; Département des sciences forestières

**La flore macrofongique du parc du Mont Saint-Bruno.**

Réaliser l'inventaire de la flore macrofongique des principaux écosystèmes du parc; préciser l'habitat, la fréquence, la représentativité, la saisonnalité, la distribution, la rareté

et la comestibilité des espèces; déterminer la diversité, la richesse en espèces rares et comestibles et le potentiel pour la conservation, l'interprétation et la récolte; formuler des recommandations en regard de la protection et de la cueillette des champignons. Rapport disponible.

Financing/*Financement:* Québec, ministère du Loisir, de la Chasse et de la Pêche

Centre de recherche en biologie forestière

$3 355

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1988 02*

## 0101-49

Guertin, S
(514) 774-0660

Mapaq; Service recherche en phytotechnie de Saint-Hyacinthe

**Effet de l'enfouissement de fumier en profondeur sur la production et la qualité du blé Frédrick.**

Evaluer la production et la qualité du blé Frédrick sur le sable St-Judes amendé en profondeur avec du fumier et amendé en surface avec une formule minérale N.P.K.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0101-50

Hallman, E
Lamonthe, E
(705) 675-1151

Laurentian University; Physics and Astronomy

**Radioisotope activities in vegetation from uranium mining areas by alpha spectroscopy**

To survey the use of mosses and lichens in monitoring the presence of radioisotopes near uranium mining and milling operations. M.Sc. Thesis available.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Laurentian University Research Fund

$6 500

**START/*DÉBUT***: *1983 09* ***END/FIN***: *1986 07*

## 0101-51

Hawley, A
Barrett, M
(403) 632-6761

Alberta Environmental Centre

**Forestry development and wildlife resources**

Determine ecological relationships, environmental impacts and management implications associated with wildlife and forestry development. A report on the effectiveness of taste repellants for preventing browsing of seedlings is in preparation. A final report on grizzly and black bear populations in a forestry area is available.

Financing/*Financement:* Alberta Environmental Centre

Alberta Forest Service

$143 000

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1989 03*

## 0101-52

Hilts, S
Moull, T
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Natural heritage stewardship research project**

To develop mechanisms to encourage the conservation and wise management of privately-owned significant natural heritage areas in Ontario, including recognition, tax rebate, and management assistance programs. Agricultural land stewardship is being incorporated. (Annual reports are available).

Financing/*Financement:* Ontario Heritage Foundation

World Wildlife Fund

Nature Conservancy of Canada

$315 000

**START/*DÉBUT***: *1984 06*

## 0101-53

Kay, B
(519) 824-4120

Department of Land Resource Science; Univeristy of Guelph

**Optimizing soil physical conditions through altered crop and soil management practices**

To reverse current trends of degradation of agricultural soils through development of new soil and crop management practices. Reports are available.

Financing/*Financement:* Ontario Ministry of Agriculture and Food

Natural Sciences and Engineering Research Council

## 0101-54

Keddy, P
(613) 564-3447

University of Ottawa; Biology

**Competition and plant community structure in wetlands**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$281 800

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1991 03*

## 0101-55

Keddy, P
(613) 564-3447

University of Ottawa; Biology

**Management of wetlands on the Canadian shield**

none given

Financing/*Financement:* Canadian Shield Foundation

$15 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 09*

## 0101-56

Keddy, P
(613) 564-3447
University of Ottawa; Biology

**Functional classification of wetland plants and the management of wetland vegetation**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$90 000

**START/*DÉBUT*:** *1988 11* **END/FIN:** *1991 10*

## 0101-57

Keddy, P
(613) 564-3447
University of Ottawa; Biology

**All terrain vehicles and rare shoreline plants on Canada's coastal plain**

none given

Financing/*Financement:* World Wildlife Fund

$30 500

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 03*

## 0101-58

Kershaw, G
(403) 492-4408
University of Alberta; Department of Geography

**Studies of the environmental effects of disturbances in the subarctic (SEEDS)**

1. Quantify the ecological effects of a transport corridor. 2. Establish and evaluate test reclamation treatments. 3. Produce a model with predictive capabilities.

Financing/*Financement:* Canadian Forestry Service

ESSO Canada Resources

Boreal Institute for Northern Studies

$80 000

**START/*DÉBUT*:** *1984 06*

## 0101-59

King, K
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Determining the CO2 exchange between the atmosphere and a large forest area**

To determine the exchange of carbon dioxide between the atmosphere and extensive areas of agric. crops and forest using the Bowen ration and computer simulation approaches.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0101-60

Kingsbury, P
(705) 949-9461
Sault College of Applied Arts and Technology

**Implementation protocol for fruit-set and seed-set of the forest wildflower Polygonatum pubescens**

Polygonatum pubescens (hairy Solomon's Seal) has been identified as a suitable species for assessing impact of spraying on pollination and fruit-set. Its value as a monitor will be further tested.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$12 500

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0101-61

Knowles, R
(514) 398-7751
Collège MacDonald; Département de microbiologie

**Nitrogen transformations in terrestrial and aquatic systems.**

Study of the processes of nitrogen fixation, nitrification denitrification and related aspects of the metabolism of hydrogen and methane. Evaluation of sources and sinks of nitrogen oxides (nitrate, nitrite and nitrous oxide) in soils, sediments and water columns of lakes. Effects of alkyl lead and alkyd tin salts on the above processes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Canada, ministère de l'Agriculture

$119 622

**START/*DÉBUT*:** *1988* **END/FIN:** *1989 04*

## 0101-62

Laflamme, D
(418) 643-7994
Ministère l'Energie et Ressources; Service de recherche appliquée

**Effets des pluies acides simulées en pépinière sur la croissance de jeunes semis d'épinette noire, d'épinette blanche et d'érable à sucre.**

Détermine les effets de pluies acides simulées sur la croissance et la biomasse de semis d'épinette noire, d'épinette blanche et d'érable à sucre. Etablit les niveaux de tolérance de ces espèces à différents taux d'acidité. Evalue le statut nutritif des espèces en fonction des doses acides.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$50 000

## 0101-63

Laflamme, D
Gagnon, G
(418) 643-7994
Ministère l'Energie et Ressources; Service de recherche appliquée

**Impact des différents stress environnementaux sur la dynamique et la productivité des écosystèmes forestiers.**

Evalue l'apport des polluants atmosphériques afin d'établir des relations entre la quantité et la qualité des polluants et la productivité forestière, l'importance des facteurs climatiques sur l'état de santé et la vitalité des peuplements forestiers, et l'effet des maladies et des insectes en tant que stress naturel. Etudie l'impact des polluants atmosphériques sur la disponibilité des éléments nutritifs et sur la toxicité des métaux lourds afin d'établir des relations de cause à effet sur différentes essences forestières. Evalue l'importance des différents stress environnementaux sur la productivité forestière et sur la dégradation de l'état de santé des forêts.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$376 400

## 0101-64

Langford, C
(514) 848-4802

Université Concordia; Département de chimie

**Spéciation des métaux lourds et des pesticides dans les eaux naturelles et les sols.**

Modélisation des interactions des pesticides avec les ions métalliques et les substances organiques des sols (substances humiques) ou les hydroxydes de fer.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0101-65

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Boreal forest stand dynamics in central Alberta**

To study the plant community and population dynamics of 8 boreal forest ecosystems representing 3 major habitat types in which important environmental factors are also monitored. Jointly with Dr. Michael S. Ross.

Financing/*Financement:* Alberta Environment Employment Program

Environment Canada, Conservation & Protection

Alberta Environment Research Trust

Alberta Environment

$298 038

**START/*DÉBUT***: *1982 01*

## 0101-66

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Status of nitrogen in the vegetation & soil in a post-fire area of the Boreal Forest Region**

Variations in the status of nitrogen in the vegetation and soil along a post-fire successional gradient in the Boreal Forest Region; and accumulation of nitrogen and phosphorus in boreal vegetation and soils and its relationship to plant succession. Dr. James Fyles completed his doctoral thesis on this subject, working in the Hondo-Slave Lake area of central Alberta. His thesis is a public document, and several published papers have been derived from it.

Financing/*Financement:* Alberta Environment

Alberta Environment Research Trust

**START/*DÉBUT***: *1985 04*

## 0101-67

LaRoi, G
Rogers, J
(403) 492-4163

Botany Department; University of Alberta

**Competition between bearberry and lingonberry in Jack pine forests of central Alberta**

To study interactions between the two co-dominant evergreen dwarf shrubs of aligotrophic (nutrient-poor) pine forests that control their relative abundance. Does acid rain affect these interactions, M.Sc. thesis research of Mr. James Rogers (unfinished).

Financing/*Financement:* Alberta Environment Research Trust

**START/*DÉBUT***: *1985 03*

## 0101-68

Larson, D
(519) 824-4120

Department of Botany; University of Guelph

**The effect of human trampling disturbance on cliff edge vegetation**

To determine the relationship between human use of Niagara Escarpment cliff-face habitat and the vegetational characteristics of the sites.

Financing/*Financement:* World Wildlife Fund

## 0101-69

Lawson, D
(306) 780-6462

Environment Canada; Conservation and Protection; Environmental Protection

**Radionuclides in vegetation**

Baseline study for assessing impact of uranium mining

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation and Protection

Saskatchewan Health Resources Board

Indian and Northern Affairs Canada

$195 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0101-70

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Ecosystem acidification and the trace element analysis of conifer wood**

To examine the trace element composition of pine wood using stepwise PIXE (Proton Induced X-Ray Emission Spectroscopy) to determine if a historical record of changing soil chemistry due to long term acidic deposition from a point source may be preserved in the wood.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$63 717

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1989 03*

## 0101-71

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Acidification in a temperate forest ecosystem and the role of sulphur gas emissions and sulphur dust**

To evaluate the effects of accelerated acidification on a temperate forest ecosystem exposed to sulphur dust emissions and long term low concentrations of sulphur gas emissions.

Financing/*Financement:* Whitecourt Environmental Study Group

$86 500

**START/*DÉBUT***: *1981 05* ***END/FIN***: *1988 03*

## 0101-72

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Nutrient redistribution in jack pine as an indication of acid deposition stress**

To determine the feasibility and applicability of using stepwise PIXE (Proton Induced X-ray Emission Spectroscopy) analysis to quantify nutrient redistribution in stressed and nonstressed jack pine trees in the Athabasca Oil Sands regions of Alberta.

Financing/*Financement:* Alberta Environment

$35 800

**START/*DÉBUT***: *1983 10* ***END/FIN***: *1988 03*

## 0101-73

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Long-term effects of low sulfur dioxide concentrations on alfalfa productivity**

1. To apportion the specific relative contributions of SHERCO Units 1 and 2 emissions to the sulfur content of crops and soils in the region; 2. To determine the relationships between any changes in crop and soil sulfur as attributable to point (1) and crop productivity; and 3. To develop numerical relationships between ambient SO2 concentrations and observed changes in crop productivity.

Financing/*Financement:* Northern States Power Company

**START/*DÉBUT***: *1983 01* ***END/FIN***: *1987 06*

## 0101-74

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**The effects of nitrogen oxides on native vegetation near compressor installations in Alberta**

The main overall objectives of this research project were to determine the sensitivity of selected plants species to injury by low concentrations of NO and/or NO2 and to determine whether selected plant species will acclimate to low concentrations of NO and/or NO2 stress.

Financing/*Financement:* Alberta Environment

$542 845

**START/*DÉBUT***: *1980 04* ***END/FIN***: *1985 03*

## 0101-75

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Alberta Government/Industry. Acid deposition research program, biophysical aspects**

1. An initial assessment of the potential impact of acid-forming gases on Alberta's environment, including local & regional air quality assessments & agricultural crops & soil evaluation; 2. An inventory of sulphur oxide & nitrogen oxide emissions in Alberta; 3. A world literature review in the biological sciences on the effects of acid deposition on vegetation, soils & surface & ground waters, and then placing these in an Alberta context.

Financing/*Financement:* Alberta Environment

Canadian Petroleum Association

Energy Resources Conservation Board

Utilities Group, Alberta

$5 309 758

**START/*DÉBUT***: *1985 02* ***END/FIN***: *1988 07*

## 0101-76

Lemieux, G
(418) 656-2837

Université Laval; Département des sciences forestières

**Humification in situ du bois raméal de diverses essences forestières et son influence sur le sol.**

Mise en valeur d'une ressource abondante susceptible d'avoir un impact en agriculture sur l'utilisation des engrais ainsi que sur le cycle des éléments en foresterie. Rapport disponible.

Financing/*Financement:* Fonds personnel

**START/*DÉBUT***: *1983 04* ***END/FIN***: *1995 04*

## 0101-77

Letreman, J
(403) 743-6687

Suncor Inc, O.S.G.

**Forest biomonitoring**

Annual assessments of forest health, air pollution effects, and forest protection.

Financing/*Financement:* Suncor Inc.

## 0101-78

Lortie, G
(418) 656-2898

Université Laval; Centre d'études nordiques

**Biostratigraphie et paléoécologie des lacs nordiques et alpins (Québec).**

Le projet concerne la paléoécologie et la biostratigraphie des diatomées dans les séquences post-glaciaires de lacs acides localisés le long d'un large gradient latitudinal s'étalant depuis Poste-de-la-Baleine juqu'aux hauts plateaux de la Gaspésie (Québec). L'étude des séquences lacustres a pour objectif d'établir et de comparer la biostratigraphie des diatomées depuis le post-glaciaire, de mettre en évidence l'évolution des flores en fonction des oscillations climatiques, de confirmer la valeur biogéographique des taxons et assemblages supposés circumpolaires, ainsi que les caractéristiques physico-chimiques de leurs milieux. Un volet du projet concerne les diatomées lacustres sub-actuelles du Québec. La région présentement étudiée concerne le Nouveau-Québec.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$42 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1990 05*

## 0101-79

Mackauer, J
(604) 291-4292

Simon Fraser University

**Quantitative assessment of biological control agents and procedures**

none available

Financing/*Financement:* National Science & Engineering Research Council

$145 500

**START/*DÉBUT***: *1983*

## 0101-80

Mackay, D
(416) 978-4019

University of Toronto; Institute for Environmental Studies

**Biosorption, bioaccumulation and food chain transfer of organic chemicals**

To review state-of-the-art research with respect to biosorption and bioaccumulation in order to enhance predictive food chain modelling.

Financing/*Financement:* Ontario Ministry of Environment

$17 500

## 0101-81

MacMillan, R
(403) 438-7515

Alberta Research Council

**Surface water storage - A GIS and digital elevation model approach to the simulation of surface water flow, accumulation and storage at a farm scale**

To develop and test a computer based method for farm scale determination of: location and extent of depressions capable of storing surface water; extent to which this depressional storage is occupied by surface water at anytime; the hydrologic linkages between depressions; and the possible hydrological and ecological impacts of draining or removing water from any or all depressions. Two papers being prepared for journal submission, PhD thesis at University of Edinburgh, Scotland.

Financing/*Financement:* Alberta Research Council

$146 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1991 03*

## 0101-82

Marsalek, J
(416) 336-4899

Rivers Research Branch; National Water Research Institute; Environment Canada

**Nonpoint sources of pollution**

Develop and refine tools for characterization and quantification of nonpoint source pollution in rural and urban areas.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1998 03*

## 0101-83

Mauffette, Y
(514) 282-7752

Université du Québec à Montréal; Département des sciences biologiques

**Impact du dépérissement des érablières sur les communautés d'insectes forestiers et d'oiseaux insectivores.**

Déterminer les effets du dépérissement sur les insectes forestiers a) effet sur la diversité des communautés b) effet sur l'abondance. Déterminer les effets du dépérissement sur les communautés d'oiseaux a) leur diversité b) leur succès de prédation.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

Fonds mondial pour la nature Canada

$63 000

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1989 05*

## 0101-84

McCaughey, J
(613) 545-6035

Queen's University; Dept. of Geography

**Forest microclimatological studies in Ontario and Newfoundland**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$48 900
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0101-85

McKerness, L
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Sources and material balance to identify mercury levels within the region covered by the CMMA.**

1) To compile available information on mercury in the environment within the study region including potential point and non-point sources of mercury, 2) To evaluate relative importance of sources, 3) To identify gaps on existing information and recommend additional work. A report is available.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$21 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1986 03*

## 0101-86

Middleton, J
(416) 688-5550

Institute of Urban and Environmental Studies; Brock University

**Conservation value and recovery process in Wainfleet Bog following peat extraction**

To study conservation value and successional process in cleared areas of a southern peat bog.

Financing/*Financement:* Ontario Ministry of Natural Resources

$94 745

**START/*DÉBUT***: *1986 05*

## 0101-87

Moore, T
(514) 398-4961

Université McGill; Département de géographie

**Biogeochemistry of peatlands.**

These will be continue to establish and model the major processes operating in peatlands of the subarctic, boreal and temperate zones of eastern Canada. i) Production, decomposition, accumulation. ii) Geochemical evolution iii) Effect of drainage of water quality. iv) Gaseous flux. v) DOC (dissoveld organic carbon) vi) Temperate swamp. vii) Subarctic fens.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$66 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0101-88

Moore, T
(514) 398-4961

Université Mc Gill; Département de géographie

**Biogeochemistry and microbiology of peatlands in Québec.**

Based on results already obtained, 6 subprojects are identified: i) Modelling the accumulation of peat in different environments through measurement of plant production and tissue decomposition and the release or retention of macronutrients; ii) The flux of CO2 and CH4 from peatlands to the atmosphere, and the microbiological controls on these processes; iii) The release of dissolved organic carbon from various plant tissues and peat types, under different environmental and chemical conditions; iv) Rates of fixation and N transformations in different peats; v) The geochemical and botanical evolution of peatlands; vi) The influence of drainage and harvesting of peat on water quality. The main sites will be located near Schefferville, Sept-Iles and Mont St. Hilaire.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$81 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1989 05*

## 0101-89

Morgantini, L
(403) 232-2068

Wildlife Resources Consulting Ltd.

**Prairie Bluff Bighorn Sheep study**

Determine impacts on bighorn sheep associated with road construction and the drilling of two gas wells in sheep winter range. Population dynamics, seasonal distribution and habitat use will be studied before, during and after drilling of the wells. Study is occurring on Prairie Bluff in southwestern Alberta. Interim reports are available.

Financing/*Financement:* Shell Canada Ltd.

$120 000

**START/*DÉBUT***: *1986 10*

## 0101-90

Morison, S
McKenna, K
Davies, D
(403) 667-3535

Yukon Territorial Government; Renewable Resources

**Ecological land classification of 1) Southern Lakes 2) MacMillan Pass**

Ecosection analysis of the above mentioned project areas.

Financing/*Financement:* Yukon Territorial Government
Indian and Northern Affairs Canada

## 0101-91

Murphy, P
(403) 492-1360

University of Alberta; Faculty of Agriculture & Foresty

**Effects of extreme wildfire behaviour; Forest fire history in Yoho National Park; Farm woodlot survey**

1. To determine climate and weather factors associated with fire rate of spread and intensity. 2. To determine fire frequency and intensity as related to vegetation changes, and basic to developing management strategies. 3. To de-

termine the opportunities for farm woodlot management and harvesting in east-central Alberta.

Financing/*Financement:* Canadian Forestry Service
Alberta Forestry Lands & Wildlife

## 0101-92

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Hydrology of wetlands**

Initiate a study to determine the role of wetlands in the hydrological cycle and the implications of wetland drainage.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0101-93

Parkinson, D
(403) 220-6344

Kananaskis Centre for Environmental Research; University of Calgary

**Terrestrial decomposer and nutrient cycling studies**

Comparative examination of nutrient deficiencies in 4 forest types, with a critical examination of microbial biomass dynamics (attempting to define their roles in nutrient tie-up and release).

Financing/*Financement:* Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1986 04*

## 0101-94

Parkinson, D
Visser, S
(403) 220-6344

Kananaskis Centre for Environmental Research; University of Calgary

**Impact of sulphur dust on soil microbial processes**

Evaluation of changes in microbial communities and efficiencies following S dust input to forest ecosystems. Assessment of effects of litter/soil acidification on mycorrhizal associations (ecto- and VA) and the role of these symbioses in ameliorating this stress on the higher plants.

Financing/*Financement:* Natural Sciences & Engineering Research Council, Strategic

**START/*DÉBUT***: *1986 11*

## 0101-95

Pastorek, E
(416) 235-5845

Ontario Ministry of Environment; Lab Services Branch; ITC Section

**Method improvements for the analysis of nitrogen and phosphorous in vegetation, soil, and sediment**

To develop a method for N and P analysis that will be more efficient and increase throughput, while maintaining or improving precision and accuracy of the determination.

Financing/*Financement:* Ontario Ministry of Environment
$60 000

**START/*DÉBUT***: *1989 09* ***END/FIN***: *1990 03*

## 0101-96

Plamondon, A
(418) 656-2116

Université Laval; Département des sciences forestières

**Efficacité du drainage des milieux boisés humides.**

Mesurer les effets du drainage sylvicole sur le comportement de la nappe phréatique et sur la croissance des arbres à court terme. Vérifier l'applicabilité de deux modèles agricoles permettant la simulation de la hauteur de la nappe d'une part et la simulation des débits d'autre part, avec ou sans réseau de drainage.

Financing/*Financement:* Papeterie Reed Ltée

## 0101-97

Protz, R
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Development of an index of soil quality**

To develop an 'index of soil quality' based on differences between virgin and cultivated soil properties.

Financing/*Financement:* Ontario Ministry of Agriculture and Food
Natural Sciences and Engineering Research Council

**START/*DÉBUT***: *1987 02*

## 0101-98

Rainnie, D
(306) 966-7442

University of Saskatchewan

**Criteria for the deliberate release of genetically engineered organisms**

Final report available

Financing/*Financement:* Environment Canada, Conservation and Protection
$19 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1987 03*

## 0101-99

Rothwell, R
(403) 492-2355

University of Alberta; Dept. of Forest Science

**Variability of soil temperature, substrate water content and tree growth on two drained and undrained Alberta peatlands**

Evaluation of the environmental impacts of forested peatland drainage on substrate environments and tree growth.

A two year study with report to be submitted to funding agency in 1990.

Financing/*Financement:* Alberta Forest Development Research Trust

$22 250

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1990 11*

## 0101-100

Roy, D
(416) 978-8846

University of Toronto; Faculty of Forestry

**Relationship of sugar maple decline and corresponding chemical changes in sap composition (carbohydrates and trace elements)**

To investigate organic and trace elemental composition of sap from healthy tress (DI 10.0) to establish the base-line information. (DI = decline index). To compare the results with the sap exudates from low (DI:18-30), medium (DI:31-50) and highly (DI:51) declined trees. To establish the chemical index (CI) with the external indexing system (DI) of MOE and IES group. To relate CI to known indices of climatic, site, atmospheric, and biological variables (which are either already observed or are in the process of being consolidated) in a cause-effect manner. Output: Annual report September 1988.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$54 400

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0101-101

Roy, G
(418) 643-7994

Ministère l'Energie et des ressources; Service de recherche appliquée

**Analyse phytosociologique et dendrochronologique dans les érablières dépérissantes des Appalaches.**

Etablir un modèle de croissance radiale de l'érable à sucre représentatif des érablières appalachiennes: les données sont recueillies à partir d'un réseau de 133 parcelles d'études semi-permanentes et rassemblent divers types écologiques. L'étude permet de dégager l'influence et l'importance de stress naturels et anthropiques sur l'évolution du dépérissement. Ce projet s'échelonne sur plusieurs années, ce, depuis 1983, est encore en cours de réalisation en 1989 et devrait se poursuivre durant les prochaines années.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$144 000

**START/*DÉBUT***: *1983*

## 0101-102

Roy, G
Dignard, N
(418) 643-7994

Ministère l'Energie et des ressources; Service de recherche appliquée

**Etude des anomalies des bourgeons de l'érable à sucre dépérissant.**

Les observations des chromosomes de l'érable révélant la présence d'anomalies, cette étude va préciser la structure de celles-ci et leurs rôles dans le processus de dépérissement. On pourra ainsi dégager le rôle des carences minérales associées au dépérissement conduisant à la mortalité de ces bourgeons et la vulnérabilité de l'érable aux écarts climatiques.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$13 000

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1990 06*

## 0101-103

Roy, G
Gagnon, G
(418) 643-7994

Ministère l'Energie et des ressources; Service de recherche appliquée

**Etude des effets de la fertilisation et du chaulage des érables dépérissants.**

Connaître l'impact d'une application de fertilisant et de chaux sur l'évolution du dépérissement; analyser l'effet de l'application sur les différentes composantes du sol, des feuilles et des symptômes du dépérissement. Ce projet s'échelonne sur plusieurs années depuis 1983, est en cours de réalisation en 1989 et devrait se poursuivre les prochaines années.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

$32 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1993 06*

## 0101-104

Ruel, J
(418) 643-7994

Ministère l'Energie et Ressources; Direction recherche et développement

**Impact de la compétition sur le sapin**

Quantifier l'impact de la compétition afin d'affiner les prescriptions relatives au dégagement soit par voie mécanique ou chimique. Ce projet se situe dans le cadre d'un programme visant à réduire l'utilisation des pesticides.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$11 000

**START/*DÉBUT***: *1988* ***END/FIN***: *1995*

## 0101-105

Schreier, H
(604) 228-4898

University of British Columbia

**Using remote sensing techniques to quantify soil degradation processes**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1985 04*

## 0101-106

Seguin, M
(418) 656-2196
Université Laval; Centre d'études nordiques

**Incidence des feux de forêt sur la distribution du pergélisol.**

La distribution géographique des indicateurs de pergélisol, phénomènes périglaciaires, suggère que le couvert végétal exerce une influence déterminante sur le pergélisol en créant un régime d'enneigement favorable ou pas à la pénétration de l'onde de gel. Le but de cette recherche est de préciser l'influence thermique du couvert forestier sur le sol et d'évaluer l'âge maximum du pergélisol en fonction de la déforestation des sites par les feux naturels.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0101-107

Séguin, M
Dionne, J
(418) 656-2196
Université Laval; Centre d'études nordiques

**Caractérisation du pergélisol dans la région de Blanc-Sablon.**

Détermination de l'étendue latérale et verticale du pergélisol dans ces palses que l'on retrouve le plus au sud de l'Amérique du Nord et de surcroît, à une altitude très près du niveau de la mer. La géométrie de ces palses sera obtenue par les levées de résistivité électrique et de polarisation provoquée. Le contenu en glace sera estimé à partir des forages et la détermination du contenu pondéral en eau du matériau végétal ou minéral. L'étude des isotopes de la glace permettra d'obtenir des paléotempératures de cette glace fossile.

Financing/*Financement:* Canada, ministère de l'Energie, des Mines et des Ressources

$6 000

**START/*DÉBUT***: *1989 06* **END/*FIN***: *1990 05*

## 0101-108

Sérodes, J
(418) 656-2868
Université Laval; Département de génie civil

**Systèmes experts pour la gestion et la protection de l'environnement.**

Mettre au point des outils utilisant la technique des systèmes experts pour aider à résoudre les problèmes reliés à la gestion et à la protection du milieu naturel comme l'aide à la décision en cas de déversements accidentels de produits toxiques, l'évaluation rapide des impacts potentiels d'un projet, etc.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Hydro-Québec

$25 000

**START/*DÉBUT***: *1986*

## 0101-109

Stanley-Jones, M
(403) 450-5278
Alberta Research Council

**Permafrost data logger system (battery operation, remote location, -60 degree C conditions)**

To electronically gather temperature data from 32 temperature probes emersed into the permafrost.

Financing/*Financement:* University of Calgary

Alberta Research Council

$7 500

**START/*DÉBUT***: *1989 01* **END/*FIN***: *1989 06*

## 0101-110

Stein, J
(418) 656-2945
Université Laval; Centre de recherche en biologie forestière

**Simulation du transport des polluants atmosphériques dans les écosystèmes forestiers et aquatiques.**

Ce programme de recherche représente un élément important du programme d'évaluation de l'impact des précipitations acides sur les écosystèmes aquatiques et forestiers où l'on veut définir des seuils de dépôts atmosphériques acceptables et vérifier ces seuils cibles au moyen de modèles prédictifs d'impact. L'objectif du programme consiste à développer un simulateur mathémathique des processus chimiques et hydrologiques à l'échelle d'un bassin versant et de le vérifier à l'aide de données prises sur le terrain. L'hiver et le printemps sont les périodes choisies pour simuler le cheminement des composantes chimiques dans l'écosystème forestier. L'étude est effectuée sur le bassin du lac Laflamme à la station expérimentale de la forêt Montmorency de l'Université Laval.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec: FCAR, Canada: CRSNG

Fonds institutionnel de recherche

$566 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 08*

## 0101-111

Tashiro, C
(416) 235-5895
Ontario Ministry of Environment; Lab Services Branch; DWO Section

**Investigation of formation of dioxins/furans in prescribed burns**

To determine whether forest fires are a source to the environment of dioxins/furans.

Financing/*Financement:* Ontario Ministry of Environment

$30 000

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1989 12*

## 0101-112

Telang, S
(403) 220-6375
Kananaskis Centre for Environmental Research; University of Calgary

**Environmental audit: Swan Hills monitoring program**

To review the reports on the baseline studies conducted at the Swan Hills landfill site. Five reports on air, soil, vegetation, groundwater, surface water, and aquatic biota were reviewed. Final report available from Chem-Securities Ltd., Calgary.

Financing/*Financement:* Chem-Securities Ltd.

**START/*DÉBUT*:** *1987 08* **END/*FIN*:** *1987 11*

## 0101-113

Thibault, J
(418) 656-5927
Université Laval; Centre de recherche en biologie forestière

**Répression biologique (allélopathique) du framboisier sur les terres forestières exploitées.**

1) Comprendre les modalités d'interférence allélopathique engendrée par les framboisiers suite aux opérations de reforestation. 2) Mettre au point un mycoherbicide spécifique au framboisier comme alternative aux méthodes traditionnelles de lutte chimique via herbicides. 3) Etude de la possibilité de produire des semis conifériens résistants aux exsudats allélopathiques des framboisiers.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$180 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 03*

## 0101-114

Thibodeau, P
(418) 643-2348
Mapaq; Service de recherche en phytotechnie de Québec

**Elaboration de modèles de prévision des stades phénologiques du fraisier et du framboisier.**

Prévoir l'arrivée des stades phénologiques de ces cultures et ainsi prévoir l'arrivée et le temps de dépistage des maladies et les ravageurs de ces cultures, ce qui permettrait d'intervenir au bon moment et ainsi assurer l'efficacité de la lutte aux ennemis de ces cultures. Ceci premettrait ainsi de rentabiliser les interventions de pesticides tout en diminuant les risques de pollution des aliments, de l'eau, du sol et des humains.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0101-115

Thibodeau, P
(418) 643-2348
Mapaq; Service de recherche en phytotechnie de Québec

**Evaluation de la résistance du Botrytis cinerea aux fongicides; mise au point d'une méthode rapide et efficace de détection de la résistance aux fongicides.**

Développer une méthode de détection de la résistance de B.cinerea afin de prévenir ou de stopper le développement de souches résitantes et de permettre une utilisation plus rationnelle des fongicides, ce qui permettrait de développer des stratégies de lutte intégrée contre les ennemis des cultures et de développer des moyens pour prévenir et réduire la pollution (aliments, eau, sol).

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0101-116

Thibodeau, P
(418) 643-2348
Mapaq; Service de recherche en phytotechnie de Québec

**Amélioration génétique de la résistance de la tomate de serre à la pourriture fusarienne.**

Développer des variétés de tomates de serre résistantes à la pourriture fusarienne et aux virus (TOMV) et adaptées au Québec, ce qui aura pour effet de réduire le nombre de fumigations stérilisantes du sol et de diminuer le nombre de traitements fongicides: donc moins d'exposition des producteurs aux fumigeants et fongicides, moins de danger de pollution des aliments, eau, sol et personnes par fongicides.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0101-117

Thompson, B
(403) 468-8008
Environment Canada; Conservation &´Protection; Environmental Protection

**Non-target impacts of bran-bait formulations of grasshopper control agents in prairie ecosystems**

(as above) Final report due March 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

Agriculture Canada

**START/*DÉBUT*:** *1989 01* **END/*FIN*:** *1990 03*

## 0101-118

Trevors, J
(519) 824-4120
University of Guelph

**Use of laboratory microcosms to investigate genetic interaction between bacteria**

Final report dated March 14, 1988 available

Financing/*Financement:* Dept. of Supply and Services Canada

Environment Canada, Conservation and Protection

$45 000

**START/*DÉBUT*:** *1987 07* **END/*FIN*:** *1988 03*

## 0101-119

Turchenek, L
(403) 438-7517
Alberta Research Council; Terrain Sciences Dept.

**Present and potential effects of anthropogenic activities on waters associated with peatlands in Alberta**

To describe the present and potential effects of anthropogenic activities on waters associated with peatlands in Alberta based on review and analysis of pertinent world and local literature.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$164 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1989 03*

## 0101-120

Turchenek, L
Abboud, S
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Assessment of present and future effects of acidic and acid forming substances on Alberta soils**

To predict if and when adverse effects will occur in Alberta soils due to atmospheric deposition of acidic and acidifying substances.

Financing/*Financement:* Acid Deposition Research Program (Alberta)

Alberta Research Council

$187 000

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *1990 03*

## 0101-121

Turchenek, L
Abboud, S
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Buffering capacity of soils**

To develop a database of soil properties - acid buffering capacity, aluminum solubility, and general soil characteristics related to acidity and ion exchange properties - needed to evaluate acidification and associated processes resulting from acidic deposition.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$46 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0101-122

Turchenek, L
Abboud, S
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Target loading for soil chemistry**

To determine an interim target loading number for selected Alberta soils using a computer simulation model.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$83 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0101-123

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Facteurs de succès pour la valorisation de la biomasse au Québec**

Financing/*Financement:* Centre québécois de valorisation de la biomasse

$25 000

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1987 06*

## 0101-124

Visser, S
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Impact of sulphur dust & lime on forest soil chemical parameters, plant productivity & revegetation**

1. To determine the effects of S0 and lime applied at 3 rates on the plant community and soil chemical/biological parameters of a lodgepole pine forest. 2. To attempt restoration of the understory in a pine forest severly acidified by S0 dust by liming and planting acid/salt-tolerant plants. No report available.

Financing/*Financement:* Canadian Petroleum Association

**START/*DÉBUT*:** *1987 04*

## 0101-125

Visser, S
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Organic matter & microbial biomass development in an age sequence of Jack Pine-Lichen Woodlands**

1. To determine the development of ground lichens and the forest floor (i.e., organic matter accumulation) in jack pine stands at various stages of maturity. 2. To determine the microbial biomass in the organic and 0-20 cm deep mineral horizons and to relate this biomass to lichen/forest floor development. Report not due until March/1989.

Financing/*Financement:* Boreal Institute for Northern Studies

$4 500

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1989 03*

## 0101-126

Walker, H
(807) 343-8508

Lakehead University; School of Forestry

**Economic wood supply analysis and forest management strategy design**

To develop techniques for: 1. assessing the economic wood supply within a forest; 2. identifying strategies for attaining various sustainable harvest levels over time; 3. illustrating these techniques through trial application to a local forest area. There are implications in the area of transportation planning to minimize environmental impact. An interim

report was submitted June 30, 1987 and a final report will be submitted June 30, 1988.

Financing/*Financement:* Canadian Forestry Service

Ontario Ministry of Natural Resources

$169 000

**START/*DÉBUT*:** *1986 04*

## 0101-127

Webster, J
(604) 291-4292

Simon Fraser University

**Commercialization of entomogenous nematodes to control certain insects in agriculture and forestry**

To commercially develop entomogenous nematodes to control certain pests of agriculture and forest nursery crops in B.C.

Financing/*Financement:* Science Council of British Columbia

Phero Tech Inc.

## 0101-128

Webster, J
(604) 291-4292

Simon Fraser University

**Improved commercial production of nematodes for the control of insect pests**

To provide consistent nematode bacterial virulence; improve production process control; produce consistently high yield in vitro culture; and improve nematode storage without loss of virulence.

Financing/*Financement:* National Science & Engineering Research Council

Phero Tech Inc

$243 480

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0101-129

Westworth, D
Brusnyk, L
(403) 462-0872

D.A. Westworth & Associates Ltd.

**Ungulate monitoring studies in the Obed Marsh thermal coal project area**

To evaluate the effectiveness of wildlife underpasses in allowing ungulate movements across the access corridor, and to develop a monitoring system suitable for documenting ungulate crossings. Final report available.

Financing/*Financement:* Obed Mountain Coal Company Limited

**START/*DÉBUT*:** *1983 10* **END/*FIN*:** *1987 04*

## 0101-130

Whitney, J
(416) 978-4977

University of Toronto

**GIS for soil erosion in northern China**

A GIS management approach to control soil erosion.

Financing/*Financement:* Canadian International Development Agency

$510 000

**START/*DÉBUT*:** *1988 05* **END/*FIN*:** *1991 04*

## 0101-131

Wightman, R
(613) 788-3841

Carleton University; Dept. of Chemistry

**Investigation and development of supercritical fluid extraction of trace organics from environmental matrices**

To investigate the application of supercritical fluid extraction techniques for the selective extraction of various classes of organic compounds e.g. PAHs, phenols, from environmental solids.

Financing/*Financement:* Ontario Ministry of Environment

$114 500

**START/*DÉBUT*:** *1988 03* **END/*FIN*:** *1990 03*

## 0101-132

Wilman, E
(403) 288-7677

Department of Economics; University of Calgary

**Recreation benefits estimation for three areas in Alberta**

To use the travel cost model for recreation benefit estimation and test the sensitivity of these estimates. To develop a set of generic recreation values that will be of use to planners & managers in: i) Alberta's integrated resource management system, ii) resource agencies involved in recreation valuation, such as Alberta Public Lands, Alberta Forest Service, & Alberta Fish & Wildlife. For final report contact address under comments.

Financing/*Financement:* Alberta, Forestry Lands and Wildlife

$15 429

**START/*DÉBUT*:** *1986 11* **END/*FIN*:** *1987 05*

## 0101-133

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Metal toxicity, plant metal tolerance and soil detoxification on the Sudbury Industrial Barrens**

To determine the exact nature and mechanism of operation of the toxic principle in Sudbury's acid, metal-contaminanted soils; to determine which plant species are able to grow on toxic soils, and to understand their tolerance mechanism; to fully understand the mechanism by which dolomitic limestone detoxifies the Sudbury barren soils, and to determine what other detoxicants might be used. Reports are available.

Financing/*Financement:* Laurentian University Research Fund

$1 000

**START/*DÉBUT*:** *1978 05*

## 0101-134

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Company

**Wildlife monitoring studies along the Norman Wells pipeline**

To assess the effects of pipeline construction and operation on the abundance, distribtion and local movements of wildlife within and adjacent to the pipeline right-of-way. Interim and final reports available for viewing at Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$500 000

**START/*DÉBUT***: *1984 01*

## 0101-135

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Impact of forest herbicides on terrestrial environment - soil and vegetation quality**

To study the indirect effects of herbicide use on vegetation, soil and wildlife habitat in the boreal forest of Manitoba. The herbicide glyphosate has been studied in the Pine Falls area of eastern Manitoba. A procedures manual has been produced and a report on the first three years of study will be available in April 1988.

Financing/*Financement:* Canada/Manitoba Forest Renewal Agreement

$94 500

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1989 03*

## 0101-136

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Assess presence of toxic chemicals in native bird populations of Manitoba**

To investigate organochlorine and PCB levels in native birds, egg samples from short-haired owls and tissues from great-horned owls were used as a pilot study. Further work is pending analytical results. The primary plan is to investigate toxic chemical presence in owls, hawks and fish-eating birds of Manitoba.

Financing/*Financement:* Wildlife Toxicology Fund

$12 500

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1988 07*

## 0101-137

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**An investigation of cadmium concentrations in wildlife of Manitoba**

To evaluate cadmium levels in kidney and liver of moose, elk, deer, wolf, bear and coyote in Manitoba.

Financing/*Financement:* Wildlife Toxicology Fund

Manitoba Dept. of Environment and Workplace Safety and Health

$48 700

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 03*

## 0101-138

Zeman, A
(416) 336-4882

Lakes Research Branch; National Water Research Institute; Environment Canada

**Cohesive sediment dynamics**

To apply and further develop a numerical model to determine the factor of safety against seepage erosion. To interpret sediment dynamics from geotechnical profiles of Lake Erie cores.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$60 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0102-1

Abouguendia, Z
(306) 933-8185
Saskatchewan Research Council

**Effects of drilling wastes on agricultural land**

To evaluate the effect of land application of drilling wastes from Sask. oilfields on soils and crops. Report will be available in April 1988.

Financing/*Financement:* Saskatchewan Energy and Mines
Energy Mines and Resources Canada
Saskatchewan Research Council
$188 000

**START/*DÉBUT***: *1985 02* ***END/FIN***: *1988 03*

## 0102-2

Bardecki, M
(416) 979-5038
Applied Geography Department; Ryerson Polytechnical Institute

**Mitigation of impact on wetlands of agricultural drainage projects**

Analysis of mitigation measures associated with Eastern Ontario subsidiary agreement agricultural drains. Report published.

Financing/*Financement:* Eastern Ontario Subsidiary Agreement
$2 080

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1986 10*

## 0102-3

Bardecki, M
(416) 979-5038
Applied Geography Department; Ryerson Polytechnical Institute

**Economic and environmental impacts of agricultural land drainage**

Provide base-line data regarding drainage projects in Southern Ontario. Interim Report.

Financing/*Financement:* Environment Canada, Conservation & Protection
Social Sciences and Humanities Research Council
$20 595

**START/*DÉBUT***: *1984 05* ***END/FIN***: *1984 10*

## 0102-4

Bardecki, M
(416) 979-5038
Applied Geography Department; Ryerson Polytechnical Institute

**Wetland conservation in Tabasco and Campeche States, Mexico**

Field study of Usamacinta and Grijalva wetlands in Mexico.

Financing/*Financement:* Social Sciences and Humanities Research Council
$1 740

**START/*DÉBUT***: *1986 02* ***END/FIN***: *1986 03*

## 0102-5

Bibeau, D
(514) 878-4801
Canadian International Paper Inc.

**Kamyr ring press for pulp and paper sludge dewatering**

To demonstrate an effective sludge dewatering system which will be applicable at pulp and paper plants across the country and which will reduce sludge incineration and disposal problems.

Financing/*Financement:* Panel on Energy Research and Development
Canadian International Paper
$1 081 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1988 07*

## 0102-6

Bonn, F
Perras, S
(819) 821-7180
Université de Sherbrooke; CARTEL

**Mesure de pollution diffuse (sol et éléments fertilisants) causée par l'érosion hydrique des surfaces en culture.**

Connaître la perte potentielle en sol et en éléments fertilisants causée par l'érosion hydrique des surfaces en culture à l'échelle d'une parcelle et de son bassin versant. La méthode développée vise l'utilisation de données multisources telles que les images satellitaires et les modèles numériques d'élévation gérées à l'aide d'un système d'information à références spatiales.

Financing/*Financement:* Conseil des recherches en argo-alimentaire et pêcheries du Québec
$45 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1991 03*

## 0102-7

Côté, L
(418) 653-9368

Paquet, Dutil et associés; Division agro-alimentaire et environnement

**Prospectives d'utilisation et d'aménagement des plaines inondables**

Analyser les diverses techniques d'aménagement agricoles et fauniques en milieu riverain et développer de nouveaux modèles d'aménagement qui favorisent une utilisation agricole de la plaine inondable tout en protégeant la flore et la faune.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$98 290

**START/*DÉBUT***: *1986 08* ***END/FIN***: *1987 12*

## 0102-8

Cournoyer, M
(514) 584-2207

Urgel Delisle et Associés

**Valorisation agricole des boues traitées à la chaux. Etude préliminaire.**

Vu l'absence de boues d'épuration chaulées au Québec, l'objectif vise à connaître la nature du produit résultant et sa valeur pour l'agriculture, tel qu'il serait produit en appliquant la méthodologie la plus probable dans les procédés de conditionnement et de stabilisation des boues d'épuration municipales. De plus d'autres données seront recueillies pour présager des problèmes et des solutions de la manipulation des boues chaulées à la ferme.

Financing/*Financement:* Québec, ministère de l'Environnement

$32 900

**START/*DÉBUT***: *1988 02* ***END/FIN***: *1988 08*

## 0102-9

Cross, S
(604) 655-3255

Aquametrix Research Ltd.

**Bonaparte River nonpoint pollution study**

To identify the areas of critical phosphorus loading and erosion adjacent to the Bonaparte River between Thompson River and Chasm Creek.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$6 164

**START/*DÉBUT***: *1987 11*

## 0102-10

Day, K
(416) 336-4659

Rivers Research Branch; National Water Research Institute

**The biological impact of agricultural runoff in streams: the effects of nutrient contaminant interactions on attached algae**

To develop the methodology to determine the effects of pesticides on attached algae found growing in aquatic ecosystems adjacent to agricultural land. To determine the effects of various levels of nutrients (N, P) on the toxicity of the herbicides, atrazine and metalochlor, to attached algal communities.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0102-11

Désy, J
Dufour, J
(418) 545-5346

Université du Québec à Chicoutimi; Département des sciences humaines

**Guide cartographique régionalisé des stress environnementaux au Québec.**

De très nombreuses sources d'information factuelles existent sur la distribution spatiale des stress environnementaux, des espaces conservés et à conserver sur le territoire québécois. Malheureusement, ces informations sont fragmentées, éparses, peu accessibles dans bien des cas, sinon soigneusement cachées. Ces synthèses cartographiques régionales veulent pallier à ces lacunes en fournissant une information de qualité scientifique, accessible et vulgarisée aux citoyen-nes, tout en contribuant à la formation de stratégies régionales de conservation.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science

Canada, ministère de l'Environnnment

Confédération des syndicats nationaux

$123 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1989 05*

## 0102-12

Dion, L
Carignan, M
(418) 643-2450

Mapaq; Service de protection de l'environnement agricole

**Etude qualitative sur les pratiques culturales et la dégradation des sols agricoles au Québec.**

Déterminer par région du MAPAQ (12 régions) les formes probables de dégradation. Estimer par région du MAPAQ l'ampleur du risque de dégradation et identifier les régions les plus vulnérables. Inventorier les pratiques culturales les plus répandues. Rapport disponible.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$60 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1987 12*

## 0102-13

Divic, S
Hodson, M
(416) 979-5345

Ryerson Polytechnical Institute

**Production of a digital elevation model on Ryerson's Gestalt photo mapper**

Accuracy comparison of manually compiled contour lines and the Gestalts D.E.M. generated contour lines.

Financing/*Financement:* Ontario Ministry of Natural Resources

$15 000

**START/*DÉBUT***: *1987 09*

## 0102-14

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Empiétements et degré d'artificialisation des côtes du Québec**

Diagnostiquer par région le degré d'artificialisation des côtes et identifier les zones d'empiétements par type d'empiétements. Développer des techniques d'identification et de suivi par téléinterprétation aéroportée ou sateilitaire.

Financing/*Financement:* Fonds institutionnel de recherche

## 0102-15

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Evaluation de la dégradation de la couverture végétale en zones récréatives par télé-interprétation.**

Etablir une méthode de télé-interprétation du suivi de la dégradation de la couverture végétale des zones récréatives à partir de l'analyse de photographies aériennes, de façon analogique et numérique. Rapport disponible.

Financing/*Financement:* Environment Canada Parks

Sources diverses

$30 000

**START/*DÉBUT***: *1988* **END/*FIN***: *1991 04*

## 0102-16

Duerden, F
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Land resource atlas for council for Yukon Indians**

Preparation of a resource atlas for native land claims in the Yukon. Atlas completed.

Financing/*Financement:* Donner Canadian Foundation

$126 000

**START/*DÉBUT***: *1982 05* **END/*FIN***: *1984 12*

## 0102-17

Fortin, M
(519) 886-0502

Ecologistics Limited

**To evaluate beach use benefits related to water quality improvements**

To develop an evaluation procedure to forecast potential benefits of propsed beach water quality rehabilitation measures. The study objectives are to: monitor beach use and beach attributes (including water quality) over time at several sites; complete a user survey; develop, verify and compare contingent valuation and travel cost models for beach recreation; and incorporate model results into a beach use planning tool to evaluate water quality improvements.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$79 100

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1990 10*

## 0102-18

Haight, M
(519) 885-1211

University of Waterloo

**Assessment of the current waste management practices on farm operations in Perth County**

To identify the nature of wastes generated, the quantities and existing disposal practices. To estimate the potential environmental impacts as a result of the waste management practices identified. To survey the opinion of farm operators regarding alternatives to current waste management practices. To provide a basis for the assessment of wastes from farms in other parts of Ontario. To prepare a final report of the study.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$3 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0102-19

Hammond, B
Baddaloo, E
(403) 427-3943

Alberta Environment

**Groundwater contributions to water and nutrient budgets of aquatic systems in Alberta Lakes**

To develop methods and strategies for measuring groundwater in-take flux. In particular, the use of inexpensive, in-situ methods (seepage meters and mini piezometers) are tested. Techniques to assist lake managers in estimating seepage more efficiently are also being developed.

Financing/*Financement:* Alberta Environment

$52 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1987 03*

## 0102-20

Harrison, J
(306) 780-6390

Environment Canada; Conservation and Protection; Environmental Protection

**Landfarming of oily waste**

To investigate the viability of applying oily waste from heavy oil to agricultural land. The addition of oily waste leads to improved agricultural land.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

$380 000

**START/*DÉBUT***: *1985 06* **END/*FIN***: *1991 06*

## 0102-21

Hendler, S
(613) 545-2188
School of Urban and Regional Planning; Queen's University

**Healthy cities, healthy landscapes**

unavailable

Financing/*Financement:* Queen's University

$2 500

**START/*DÉBUT*:** *1987 12* **END/FIN:** *1988 11*

## 0102-22

Hilditch, T
(416) 477-8400
Gartner Lee Associates Ltd.

**Establishing vegetation on erosion-prone landfill slopes in Ontario**

To research, test and compile in an understandable and usable form, the information and techniques necessary to remediate surface erosion problems through proper vegetation management at landfills across Ontario.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$194 800

**START/*DÉBUT*:** *1987 02* **END/FIN:** *1990 01*

## 0102-23

Hilts, S
Moull, T
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Natural heritage stewardship research project**

To develop mechanisms to encourage the conservation and wise management of privately-owned significant natural heritage areas in Ontario, including recognition, tax rebate, and management assistance programs. Agricultural land stewardship is being incorporated. (Annual reports are available).

Financing/*Financement:* Ontario Heritage Foundation

World Wildlife Fund

Nature Conservancy of Canada

$315 000

**START/*DÉBUT*:** *1984 06*

## 0102-24

Huff, D
(416) 444-8419
The Federation of Ontario Naturalists; FON Conservation Centre

**The effects of Forestry Operations upon the Environment of Ontario**

To review relevant literature, concepts and practices pertaining to the environmental effects of forestry operation focussing in particular on the ecosystem dynamics, chemicals used in forestry operations and on economic ramifications. To also establish and assess the economic and social cause and effect linkage between the environmental effects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$100 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 04*

## 0102-25

Johnson, R
(403) 632-6761
Alberta Environmental Centre

**Water use and salt transport on agricultural land**

To identify a cropping system that uses sufficient soil moisture available from precipitation to prevent seepage to groundwater and salinity accumulation and to explore the use of plants to lower groundwater tables. Progress reports are available.

Financing/*Financement:* Alberta Environmental Centre

Alberta Environment

$300 000

**START/*DÉBUT*:** *1985 05*

## 0102-26

Johnston, R
(403) 237-1234
BP Canada Inc.

**Field surveys and monitoring of bald eagles in the vicinity of Hope Brook Mine, Newfoundland**

To determine and monitor population size and parameters, distribution, breeding success and other ecological parameters of bald eagles in the vicinity of the Hope Brook Mine, Newfoundland ie. Cinq Cerf Bay, Couteau Bay, Connoire Bay. Period of study 1986-1989. Interim reports available from BP Canada Inc., Calgary (see above).

Financing/*Financement:* Hope Brook Gold Inc.

$20 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 07*

## 0102-27

Johnston, R
(403) 237-1234
BP Canada Inc.

**LaPoile caribou herd study, Newfoundland**

1. To determine and monitor herd's population size and parameters, rates and causes of mortality, seasonal distribution and habitat (year round) within herd's total range, and numbers, distribution and habitat use in vicinity of Hope Brook Mine. 2. To assess what effects development of the Hope Brook Mine has on the herd re:above parameters. Annual reports available commencing in 2nd half, 1988, for four years.

Financing/*Financement:* Hope Brook Gold Inc.

Newfoundland and Labrador Wildlife Division

$800 000

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1991 04*

## 0102-28

Joshi, R
(403) 220-7177

Department of Civil Engineering; University of Calgary

**1. Coal ash storage & utilization. 2. In-situ stabilization of waste during sites & permeability.**

1. To ensure safe storage of coal ash from power plants and to economically utilize ash as a construction material. 2. To allow construction on old waste sites without settlement and to minimize gas emission and leachates from such sites.

Financing/*Financement:* Natural Sciences & Engineering Research Council

TransAlta Utilities

## 0102-29

Kachanoski, R
(519) 824-4120

Dept. of Land Resource Science; University of Guelph

**Tillage and event based soil and phosphorus loss**

To determine the effect of tillage systems (conventional, minimum, no-till) on phosphorus/soil loss and associated enrichment ratios for three representative soils (sandy, silt and clay loam). To determine seasonal variation in phosphorus and soil losses on different landscape positions with simulated rainfall. To determine annual phosphorus and soil losses from soil landscapes for natural precipitation events. To establish linkages between plot scale and landscape scale phosphorus and soil loss data for different tillage systems. Output: Progress Report August 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$202 500

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0102-30

Kaushik, N
Gordon, A
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Riparian forest plantations for wood production & stream rehabilitation: an integrated approach**

1. To evaluate the growth potential and nitrogen fluxes of selected hybrid poplar and alder plantations along the banks of Washington Creek. 2. To compare fish biomass and production in the planted and control reach of Washington Creek. 3. To compare secondary production in the planted reach and control reach of Washington Creek.

Financing/*Financement:* Ontario Ministry of Natural Resources

$33 725

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0102-31

Kershaw, G
(403) 492-4408

University of Alberta; Department of Geography

**Studies of the environmental effects of disturbances in the subarctic (SEEDS)**

1. Quantify the ecological effects of a transport corridor. 2. Establish and evaluate test reclamation treatments. 3. Produce a model with predictive capabilities.

Financing/*Financement:* Canadian Forestry Service

ESSO Canada Resources

Boreal Institute for Northern Studies

$80 000

**START/*DÉBUT***: *1984 06*

## 0102-32

Kirk, D
(416) 978-7406

University of Toronto

**Determining the integrity of solidified wastes by large scale leach columns under environmental and controlled conditions**

To evaluate the leachability and determine the impact of municipal refuse interaction of solid industrial waste (steel flue gas dust) with various solid waste/municipal waste combinations. The primary goal of the study is to quantify the rate of release and mobility of metal and organic species from the large column experimental test cells. The secondary goal is to predict the long term natural leaching of solid wastes.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$146 500

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1990 08*

## 0102-33

Krishnappan, B
(416) 336-4766

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fine sediment dynamics including contaminants and biota interactions and modelling of river flows**

Carry out experimental investigations into the transport mechanisms of fine sediments in river systems using the rotating flume and to develop modelling capabilities in the area of river flows and transport of fine sediments and the associated contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1995 03*

## 0102-34

Larson, D
(519) 824-4120

Department of Botany; University of Guelph

**The effect of human trampling disturbance on cliff edge vegetation**

To determine the relationship between human use of Niagara Escarpment cliff-face habitat and the vegetational characteristics of the sites.

Financing/*Financement:* World Wildlife Fund

## 0102-35

Leroueil, S
Larochelle, P
(418) 656-2601

Université Laval; Département de génie civil

**Etudes des aspects géotechniques des problèmes environnementaux: caractérisation des dépôts et mesure de la perméabilité.**

Le projet comporte trois volets complémentaires ayant comme objectif commun de donner des solutions pratiques fiables à l'ingénieur aux prises avec des problèmes de pollution. Le premier volet vise à améliorer la technologie du piézocône utilisé pour définir la stratigraphie des dépôts; le deuxième, le développement de méthodes de mesure de la perméabilité et de méthodes d'interprétation fiables et le troisième concerne la perméabilité des mélanges sol-bentonite utilisés dans la construction de membranes d'étanchéité.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$91 000

**START/*DÉBUT***: *1986 06* **END/FIN**: *1989 05*

## 0102-36

Loeks, D
(403) 633-5470

Sundog Resources

**Competing interests on agricultural lands**

Clarify land use conflicts and devise a range of options for resolving resource conflicts in farm land disposition and in farm land management.

Financing/*Financement:* Yukon Department of Renewable Resources

$25 000

**START/*DÉBUT***: *1986 05* **END/FIN**: *1987 04*

## 0102-37

Mackenzie, L
(403) 427-3943

Alberta Environment

**University of Calgary's master student phosphogypsum study**

To obtain background information on the environmental aspects of phosphogypsum ponds and to recommend a preliminary plan for site assessment and investigation of an Alberta phosphogypsum pond.

Financing/*Financement:* Alberta Environment

$10 000

**START/*DÉBUT***: *1986 07* **END/FIN**: *1987 03*

## 0102-38

Mackey, P
(418) 643-6355

Ministère des Transports; Direction de la recherche

**L'aménagement des rues**

Stimuler l'intérêt des citoyens et des autorités municipales sur les façons de traiter l'espace voirie, notamment pour réduire la vitesse de circulation et favoriser les modes les plus compatibles avec l'environnement.Intégrer les rues au milieu environnement, réduire les nuisances associées aux véhicules en milieu urbain (bruit, accidents avec blessés, insécurité) et accroître les attentes des résidants vis-à-vis la qualité de leur milieu de vie. La recherche examine la possibilités d'appliquer au québec les résultats des recherches effectuées sur l'aménagement des rues aux Pays-Bas, en Allemagne et en Australie.

Financing/*Financement:* Québec, ministère des Transports

$15 000

**START/*DÉBUT***: *1985* **END/FIN**: *1988*

## 0102-39

MacMillan, R
(403) 438-7515

Alberta Research Council

**Surface water storage - A GIS and digital elevation model approach to the simulation of surface water flow, accumulation and storage at a farm scale**

To develop and test a computer based method for farm scale determination of: location and extent of depressions capable of storing surface water; extent to which this depressional storage is occupied by surface water at anytime; the hydrologic linkages between depressions; and the possible hydrological and ecological impacts of draining or removing water from any or all depressions. Two papers being prepared for journal submission, PhD thesis at University of Edinburgh, Scotland.

Financing/*Financement:* Alberta Research Council

$146 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1991 03*

## 0102-40

Mathieu, A
Gauthier, R
(819) 663-9294

Boileau et associés Inc.

**Etude des coûts d'immobilisation et d'exploration concernant les techniques actuelles de traitement des boues et des modes d'élimination finale**

Etablit les coûts d'immobilisation et d'exploitation pour divers procédés de traitement et de disposition des boues d'usines d'épuration pour différentes capacités d'usines, différentes distances de transport et différentes siccité des boues. Parmi les types de traitement de boues étudiés, mentionnons le conditionnement et l'épaississement, la stabilisation et la déshydratation. Les modes d'élimination étudiés sont la valorisation agricole et l'enfouissement.

Financing/*Financement:* Québec, ministère de l'Environnement

$435 000

**START/*DÉBUT***: *1987 10* **END/FIN**: *1988 05*

## 0102-41

McGrath, G
(613) 545-6036

Geography; Queen's University

**Survey mapping and land tenure support for development**

unavailable

Financing/*Financement:* Ordnance Survey of Great Britain

$30 000

**START/*DÉBUT*:** *1987 05*

## 0102-42

McKague, K
(519) 886-0520

Ecologistics Limited

**Quantifying infiltration through municipal solid waste landfill covers**

Install lysimeters in landfill covers possessing distinct differences in soil texture. Accumulate data on landfill cover infiltration for the soil textures considered through rainfall simulation and continued monitoring of the installations. Modify an existing U.S. Environmental Protection Agency landfill cover water budget/leachate generation model to facilitate its use under Ontario conditions. Evaluate the usefulness of the modified model for predicting cover infiltration rates.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$121 900

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1991 06*

## 0102-43

Mooij, H
(416) 323-5160

Ontario Ministry of Environment; Waste Management Branch

**Landfill monitoring protocol development for Ontario**

To develop practicable recommendations to the Ministry of the Environment, based on expert concensus positions and documented present practices and procedures, for the development of landfill leachate and groundwater quality monitoring protocols and procedures.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$21 600

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0102-44

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snow management and snowmelt infiltration**

To determine tillage methods to enhance snowmelt infiltration; meltwater infiltration into cracked soils; and effect of tillage practices on surface run-off and groundwater recharge.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/*FIN*:** *ongoing*

## 0102-45

Perras, S
(819) 567-1405

Université de Sherbrooke; CARTEL

**Application de la télédétection à la mesure de l'érosion hydrique associée à la culture du maïs et des céréales.**

Intégration des données multisources à un système d'information à références spatiales pour le calcul des pertes de sol, ces pertes étant causées par l'érosion hydrique survenant principalement sur les cultures sarclées. Pour ce faire, nous utilisons l'équation universelle des pertes de sol. La particularité de la méthode proposée est d'utiliser, pour résoudre cette équation, des données provenant de diverses sources (imagerie satellitaire, modèle numérique d'élévation, carte pédologique numérisée) et de les rendre superposables sous forme matricielle. Rapport disponible.

Financing/*Financement:* Sources diverses

$60 000

**START/*DÉBUT*:** *1988 01* **END/*FIN*:** *1989 03*

## 0102-46

Phillips, W
Adamowicz, W
(403) 492-4228

University of Alberta; Department of Rural Economy

**An empirical assessment of the recreational value of wildlife resources in Alberta**

The objective of this project is to estimate use and non-use values of wildlife in Alberta, including the effect of risk on wildlife values.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

$19 000

**START/*DÉBUT*:** *1988 01* **END/*FIN*:** *1989 07*

## 0102-47

Pond, B
Yeates, M
(613) 545-6039

Geography; Queen's University

**Urban growth and rural land**

unavailable

Financing/*Financement:* Royal Canadian Geographical Society

$50 000

**START/*DÉBUT*:** *1986* **END/*FIN*:** *1988 00*

## 0102-48

Pullen, M
(416) 449-2500

Marshall Macklin Monaghan Limited

**Geoflow meter, application to measuring gas flow in soil**

To determine the applicability of the Geoflow Meter and Probe to measure directly the flux of soil gases away from landfill sites. If successful, this would give a method of esti-

mating gas volume migration away from a site. At present only concentration of combustible gas can be measured.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$56 600

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0102-49

Quigley, R
(519) 679-3315

Geotechnical Research Centre; University of Western Ontario

**Clay/Leachate Compatibility Study Hydraulic Conductivity, Ottawa-Carleton 'Leda' Clay Barrier Soils**

To assess the compatibility of four Leda Clay samples (from the Ottawa-Carleton region) with typical domestic waste leachate. The work would be used as input for environmental hearings associated with selection of future landfill sites on leda clay. The work was requested by MacLaren Engineers at the request of the Ontario Ministry of the Environment.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$25 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1989 07*

## 0102-50

Quigley, R
(519) 661-3344

University of Western Ontario; Department of Civil Engineering

**Clay/leachate compatibility of Lada clay, Ottawa/ Carleton region, Ontario**

Site specific research input to site selection in the Ottawa/ Carleton region.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 07*

## 0102-51

Racz, G
(204) 474-6036

University of Manitoba

**Monitor soil characteristics of pasture and cropland used for fertigation**

To monitor the effect of fertilizer plant effluent on soils used for fertigation, and to ensure compliance with the Clean Environment Commission Order. Reports filed annually with the Manitoba Environmental Management Division.

Financing/*Financement:* Simplot Chemical Company Ltd.

$10 000

**START/*DÉBUT*:** *1974*

## 0102-52

Rainer, J
(613) 993-9751

National Research Council

**An investigation of vibration isolation in a house for reduction of train vibration**

To determine the characteristics of ground vibrations from trains at two locations. To determine the effectiveness of a given vibration method in reducing train-induced vibrations in a test house.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$73 400

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

## 0102-53

Shaw, T
(416) 688-5550

Brock University; Dept. of Geography

**An assessment of landuse impact on the microclimate of the Fonthill Kame**

The principal objective of this study is to provide a detailed assessment of the Kame's microclimate in terms of its spatial variations in temperature, noting in particular evidence of the depth and rate of cold-air drainage on a variety of slopes under radiation frost conditions. Apart from providing the necessary information on the microclimate variations on the Kame, which to date are poorly understood, this aspect of the study could identify specific areas of the Kame where the application of numerical modelling studies will have a reasonable chance of showing significant results.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$30 500

**START/*DÉBUT*:** *1989 08* **END/FIN:** *1991 07*

## 0102-54

Tabi, M
(418) 643-9630

Mapaq; Service de la recherche en sols

**Inventaire sur la conservation des sols au Québec.**

Etudier les divers phénomènes de dégradation des sols par perte de matières organiques, compaction, érosion, acidification et pollution diffuse attribuables à l'agriculture. Déterminer l'envergure du phénomène pour l'ensemble du territoire québécois.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0102-55

Teskey, W
(403) 220-7397

University of Calgary; Dept. of Surveying Engineering

**Deformation surveys research**

Precise trig levelling - objective is to determine if precise trig levelling can be used to determine vertical movements of 5 mm (in structures such as earthfill dams) over lines of observation of up to 500 metres. Integrated analysis - objective is to integrate measured deformations (determined by survey and geotechnical methods) on or in a structure into the finite element model for the structure to better estimate actual deformation behaviour.

Financing/*Financement:* Alberta Environment

$25 000
**START/*DÉBUT*:** *1988 08*

## 0102-56

Thomson, C
(416) 688-5550

Brock University; Dept. of Geography

**Recreational corridors in regional Niagara**

To map all natural and man-made recreational attractions, facilities etc., and to identify the major corridors in which the major features may be found.

Financing/*Financement:* Brock University

## 0102-57

Tinline, R
Pond, B
(613) 545-6039

Geography; Queen's University

**Development of softwares for rural land analysis program**

unavailable

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1986 00*

## 0102-58

Trudell, M
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Hydrodynamics of soil salinization in east-central Alberta**

To evaluate the role of shallow groundwater flow systems in the redistribution of soluble salts, and to assess the scale over which the redistribution of salts occurs in the Prairies.

Financing/*Financement:* Alberta Research Council

$593 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0102-59

Trudell, M
Ched, D
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Assessment of potential groundwater contamination by migration of enhanced oil recovery (EOR) production fluids**

To evaluate the potential for contamination of shallow aquifers by production fluids from enhanced oil recovery.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Alberta Research Council

$58 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0102-60

Veilleux, J
(418) 643-7994

Ministère l'Energie et Ressources; Direction recherche et développement

**Utilisation de biomasse, de boues d'égout et de lisiers sur les sols forestiers.**

1-Amélioration des propriétés physico-chimiques des sols pour assurer la croissance normale d'arbres plantés. 2-Augmentation du bilan humique des sols et de la teneur en éléments nutritifs. 3-Détermination des quantités optimales ou maximales qui peuvent être appliquées. 4-Vérification des effets résiduels et des toxicités possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$220 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1990 04*

## 0102-61

Vézina, L
(514) 774-0660

Mapaq; Service recherche en phytotechnie de Saint-Hyacinthe

**Stabilisation des berges de cours d'eau agricoles par l'ensemencement de plantes herbacées.**

Evaluer l'effet de l'engazonnement de berges de cours d'eau: comme moyen de mitigation de la dégradation des talus et bandes riveraines; comme moyen pour nuire à l'établissement de mauvaises herbes sur les talus; comme intervention naturelle pour protéger les eaux des voies aménagées de la contamination directe par des polluants agricoles (pesticides et engrais).

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$10 000

**START/*DÉBUT*:** *1985 10* **END/FIN:** *1988 10*

## 0102-62

Visser, S
(418) 656-3280

Université Laval; Département des sols

**Effet de l'épandage du lisier de porc sur la qualité des eaux de percolation provenant de diverses classes texturées de sol.**

Etudier la problématique socio-économique et environnementale entourant l'épandage du lisier de porc au Québec. Vérifiez les hypothèses suivantes: (1) l'épandage du lisier de porc constitue un danger au niveau de la qualité (fertilité, toxicité) des eaux de percolation pour l'environnement aquatique; (2) le degré de pollution est fonction de la classe texturale du sol et de la qualité de lisier appliquée.

Financing/*Financement:* Québec, ministère de l'Environnement

$10 500

**START/*DÉBUT*:** *1985 10* **END/FIN:** *1986 12*

## 0102-63

Walker, H
(807) 343-8508

Lakehead University; School of Forestry

**Economic wood supply analysis and forest management strategy design**

To develop techniques for: 1. assessing the economic wood supply within a forest; 2. identifying strategies for attaining various sustainable harvest levels over time; 3. illustrating these techniques through trial application to a local forest area. There are implications in the area of transportation planning to minimize environmental impact. An interim report was submitted June 30, 1987 and a final report will be submitted June 30, 1988.

Financing/*Financement:* Canadian Forestry Service

Ontario Ministry of Natural Resources

$169 000

**START/*DÉBUT*:** *1986 04*

## 0102-64

Walters, M
(416) 895-1281

Lake Simcoe Conservation Authority

**In situ determination of fecal indicator bacteria survival in agriculturally impacted watersheds**

To document and investigate the seasonal variations in bottom sediments and water columns, including the environmental factors that may influence bacterial survival. To provide bacterial survival data required to develop a transport model and to assess the contribution of individual inputs from agricultural sources on beaches.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$154 000

**START/*DÉBUT*:** *1987 11* **END/*FIN*:** *1990 10*

## 0102-65

Wilman, E
(403) 288-7677

Department of Economics; University of Calgary

**Recreation benefits estimation for three areas in Alberta**

To use the travel cost model for recreation benefit estimation and test the sensitivity of these estimates. To develop a set of generic recreation values that will be of use to planners & managers in: i) Alberta's integrated resource management system, ii) resource agencies involved in recreation valuation, such as Alberta Public Lands, Alberta Forest Service, & Alberta Fish & Wildlife. For final report contact address under comments.

Financing/*Financement:* Alberta, Forestry Lands and Wildlife

$15 429

**START/*DÉBUT*:** *1986 11* **END/*FIN*:** *1987 05*

## 0102-66

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Company

**Wildlife monitoring studies along the Norman Wells pipeline**

To assess the effects of pipeline construction and operation on the abundance, distribtion and local movements of wildlife within and adjacent to the pipeline right-of-way. Interim and final reports available for viewing at Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$500 000

**START/*DÉBUT*:** *1984 01*

### 0103-1

Atwater, J
(604) 228-4694

University of British Columbia

**Generation and migration of landfill leachate**

none available

Financing/*Financement:* National Science & Engineering Research Council

### 0103-2

Bachu, S
(403) 438-7601

Alberta Research Council

**Numerical prediction of pressure buildup at the Swan Hills injection well of the Alberta Special Waste Management Corporation (ASWMC)**

To calibrate through history matching a finite element numerical model of the deep injection of liquid wastes at the Swan Hills facility of the ASWMC. To predict for various rates of injection the pressure buildup during the next 20 years.

Financing/*Financement:* Stanley Associates Engineering Ltd.

$22 000

**START/*DÉBUT***: *1988 09* **END/FIN**: *1989 03*

### 0103-3

Bachu, S
Hitchon, B
(403) 438-7601

Alberta Research Council

**Hydrogeology of the Swan Hills area: evaluation for deep waste injection**

Selection of aquifers for environmentally safe disposal of waste water from treatment processes at the Swan Hills facility of Alberta Special Waste Management Corporation.

Financing/*Financement:* Alberta Special Waste Management Corporation

$135 000

**START/*DÉBUT***: *1985 09* **END/FIN**: *1986 07*

### 0103-4

Bachu, S
Hitchon, B
(403) 438-7601

Alberta Research Council

**Feasibility study to determine the impact of bitumen recovery at AOSTRA underground test facility**

To identify, collect and review all pertinent geological, fluid flow, contaminant transport and heat transfer information in order to assess the availibility of data for future impact studies.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987 10* **END/FIN**: *1988 03*

### 0103-5

Bachu, S
Hitchon, B
(403) 438-7601

Alberta Research Council

**Evaluation of deep waste disposal, Cold Lake Area, Alberta and Saskatchewan**

To evaluate the regional and local effects of deep waste injection at sites in Cold Lake area, Alberta, in terms of pressure buildups, geochemical reactions between injected waters and formation waters and rocks, and in terms of fracturing thresholds, using predicted rates of injection to the year 2015.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$600 000

**START/*DÉBUT***: *1985 01* **END/FIN**: *1988 03*

### 0103-6

Baker, J
(519) 885-1211

University of Waterloo; Institute for Groundwater Research; Dept. for Earth Sciences

**The origin and distribution of methane in the Alliston sand aquifer**

To identify both the origin of methane in the Alliston sand aquifer and the goechemical and hydrogeological factors controlling its distribution.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$63 200

**START/*DÉBUT***: *1987 11* **END/FIN**: *1990 10*

### 0103-7

Barker, J
Cherry, J
(519) 885-1211

Institute for Groundwater Research; University of Waterloo

**Mobility and persistence of selected organic solute in anaerobic groundwaters and possible in situ remediation measures**

To define the fate and persistence of selected organic solutes in anaerobic groundwater. To evaluate remediation. To establish a field test site.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$378 900

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0103-8

Beauchamp, E
Kachanoski, G
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Crop management & nitrate contamination of groundwater with sandy soils used for tobacco production**

Includes - quantification of nitrate leaching to groundwater with a corn crop with the effects of applied fertilizer N, tillage practices and irrigation practices.

Financing/*Financement:* Agriculture Canada, Tobacco Diversification Plan

$400 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1992 03*

## 0103-9

Beerli, M
(819) 562-7979

Coratel Ltée

**Essais pilotes de réduction des rejets d'azote ammoniacal pour prévenir les surcharges azotées dans les eaux souterraines.**

Vérifier par des essais pilotes le bien fondé des conclusions et recommandations de l'étude de préfaisabilité technico-économique de récupération des rejets d'azote ammmoniacal émis à l'atmosphère par le procédé aérobie de traitement du lisier de porc de l'usine de Saint-Elzéar.

Financing/*Financement:* Québec, ministère de l'Environnement

$63 800

**START/*DÉBUT*:** *1988 07* **END/FIN:** *1989 03*

## 0103-10

Belore, H
(416) 497-2929

Cumming-Cockburn Limited

**Regional low flow analysis for the Central and Southeastern regions of Ontario**

To test available methodologies for predicting low flows in the Central and Southeastern regions. To identify suitable techniques for application and required research/refinements. Develop an appropriate database including additional parameters such as evaporation, groundwater fluctuations (well records), etc. Refine multivariate analysis techniques for predicting low flows. Research to develop alternative computerbased graphical low flow regional techniques.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$52 500

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1990 05*

## 0103-11

Bibeau, D
(514) 878-4801

Canadian International Paper Inc.

**Kamyr ring press for pulp and paper sludge dewatering**

To demonstrate an effective sludge dewatering system which will be applicable at pulp and paper plants across the country and which will reduce sludge incineration and disposal problems.

Financing/*Financement:* Panel on Energy Research and Development

Canadian International Paper

$1 081 000

**START/*DÉBUT*:** *1987 07* **END/FIN:** *1988 07*

## 0103-12

Bruton, J
(416) 336-4922

Rivers Research Branch; National Water Research Institute; Environment Canada

**Expert systems analyses of remote in-situ basin data**

To conduct research directed towards the applications of expert systems (specifically DADS and RAISON) to both remotely acquired optical data and existing in-situ data collected over and/or in basins.

Financing/*Financement:* Environment Canada, Conservation and Protection

$500 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1994 03*

## 0103-13

Bukata, R
(416) 336-4670

Rivers Research Branch; National Water Research Institute; Environment Canada

**Remote sensing of river systems and basins**

To conduct through both experimental and theoretical research, studies of water quality in rivers and lakes, groundwater flow in freshwater basins, and remote sensing of aquatic resources on local and/or global basis.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1999 03*

## 0103-14

Bull, G
Hyslop, W
(604) 682-8777

Nova Tec Consultants Inc.

**Assessment of Takla Landing contour trench ground disposal system - biomat performance**

To study biomat development and performance on natural soil, imported sand and geotextile cloth leading to more refined design criteria for the ground disposal of septic tank effluent under adverse site conditions. Final report due Nov. 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Mortgage & Housing Corporation

$19 337

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1989 11*

## 0103-15

Campbell, H
(416) 336-4717

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**A guide for the evaluation of long-term leachability of solidified wastes**

Guidance for selection of leaching test method based on expected leaching scenario. Protection of groundwater quality.

Financing/*Financement:* Ontario Ministry of Environment

$140 000

**START/*DÉBUT*:** *1987 11* **END/FIN:** *ongoing*

## 0103-16

Canning, R
(416) 639-6320

Zenon Environmental Inc.

**Field demonstration of membrane technology for treatment of landfill leachate**

To demonstrate leachate treatment by means of membrane-based processes. To design, and construct a portable pilot-scale membrane system and operate the system as treatment process at Muskoka Lakes Landfill Site. To assess technical and economic feasibility of this process and make recommendations for applications at other sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$130 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0103-17

Cherry, J
(519) 888-4516

University of Waterloo; Centre for Groundwater Research

**Groundwater impact from large septic systems for sewage disposal in Ontario**

To better understand contaminant attenuation processes in large septic systems and develop a method to predict the extent of aquifer contamination from new large septic systems.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$195 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1992 04*

## 0103-18

Cherry, J
(519) 888-4516

University of Waterloo; Institute for Groundwater Research

**Measuring groundwater velocity and hydrodynamic dispersion in a single fracture in fractured shale**

To investigate the relation between the fracture aperture width, to be determined from hydraulic tests and tracer experiments, and compare to the true aperture. Develop different field measurement techniques and evaluate for accuracy in predicting groundwater velocity. Determine the relation between the aperture density distribution and hydrodynamic dispersion. To determine whether a stochastic approach will be required to account for macroscopic hydrodynamic dispersion at the local field scale. Output: Progress report June 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$120 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0103-19

Cherry, J
Sudicki, E
(519) 885-1211

Institute for Groundwater Research; University of Waterloo

**Evaluation of Contaminant Velocity Groundwater in Low-permeability Fractured Shale**

To evaluate several methods for determining the average velocity of non-reactive contaminants in shale of low permeability, to assess the velocity and matrix diffusion effects in low permeability, but probably high velocity zones in the Queenston shale, and to determine how long it will take for contaminants to migrate from landfills in the Burlington-Hamilton area to Lake Ontario.

Financing/*Financement:* Ontario Ministry of the Environemnt, Research Advisory Committee

$90 000

**START/*DÉBUT*:** *1985 08* **END/FIN:** *1989 04*

## 0103-20

Craig, D
(306) 975-5753

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Wetland hydrology/climate change**

To determine the groundwater component of the hydrological cycle at slough no. 50 at the St. Denis National Wildlife site. To assess the hydrogeological conditions at this site with respect to a study of fractured tills.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *ongoing*

## 0103-21

Craig, D
(306) 975-5753

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Groundwater in the permafrost environment**

To investigate - the interactions of permafrost and groundwater, especially as related to widespread freeze-thaw cycles; the movement of water, heat and/or chemical constituents in a permafrost environment; the relationship between groundwater dynamics, surface water hydrology, and permafrost; and the effects of seasonal and long-term climatic change on the thermal regime related to the distribution of permafrost.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/*FIN***: *ongoing*

## 0103-22

Craig, D
(306) 975-5753

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Acid neutralisation in groundwater flow systems**

To compile and disseminate information acquired during the Turkey Lakes watershed groundwater study to the scientific community, to management and to the general public.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *1989*

## 0103-23

Crowe, A
(416) 336-4585

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contamination transport in granular aquifers**

To investigate the physical, chemical and biological controls on contaminant transport in granular aquifers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada

**START/*DÉBUT***: *1979 10* **END/*FIN***: *ongoing*

## 0103-24

Cullimore, D
(306) 584-4556

Regina Water Research Institute

**Monitoring microbial activity in lab anaerobic filters treating septic tank effluent at low temperatures**

By monitoring the dynamic microbiological processes taking place as the biofilm develops on both plastic and geosynthetic media contribute to the understanding of basic phenomena leading to the design of improved anaerobic septic tanks effluent filters under Canadian climatic conditions. Final reports unpublished by the sponsor - 'Monitoring Microbial Activity in Laboratory Anaerobic Filters Treating Septic Tank Effluent at Low Temperatures', RWRI Report Number 54, Dec. 1987 and 'A Statistical Interpretation of the Microbial Activity in Laboratory Septic Tank Effluent Filter Reactors at Low Temperature', RWRI Report Number 56, Mar. 1988. Both reports by Dr. D. Cullimore and staff at Regina Water Research Institute, University of Regina.

Financing/*Financement:* Environment Canada, Conservation & Protection

$13 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1988 03*

## 0103-25

Danielson, R
Okazawa, N
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Landtreatment of oily waste sludges**

To determine the effects of landtreatment with oily wastes on the long term use of the land for agronomic purposes, to determine the uptake of undesirable organic compounds and heavy metals by crops, to determine the effects of landtreatment on surface and groundwater quality and to determine the effectiveness of landtreatment as a disposal method for oilfield wastes. Reports available.

Financing/*Financement:* Canadian Petroleum Association

Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986 01*

## 0103-26

Dickman, M
Brindle, I
(416) 688-5550

Biological Science & Chemistry Departments; Brock University

**Assessment of Contaminant Migration from Industrial and Landfill Sources in the Twelve Mile Creek**

To determine the industrial and agricultural sources and classes of organic contaminants and toxic metals in the Twelve Mile Creek and Welland River. 2. To estimate contaminant loadings of in-place pollutants in sediments. 3. To correlate findings with other toxicity studies. 4. To establish a realistic model for the distribribution and fate of the identified contaminants in sediments along the above water courses.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$180 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 04*

## 0103-27

Divic, S
Hodson, M
(416) 979-5345

Ryerson Polytechnical Institute

**Production of a digital elevation model on Ryerson's Gestalt photo mapper**

Accuracy comparison of manually compiled contour lines and the Gestalts D.E.M. generated contour lines.

Financing/*Financement:* Ontario Ministry of Natural Resources

$15 000

**START/*DÉBUT***: *1987 09*

## 0103-28

Droste, R
(613) 564-3348

University of Ottawa; Civil Engineering

**Anaerobic and air stripping wastewater treatment**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$115 640

**START/*DÉBUT***: *1985 04* **END/FIN**: *1991 03*

## 0103-29

Dusseault, M
(519) 885-1211

Department of Geological Engineering; University of Waterloo

**Geomechanical Investigation of the Origin and Properties of Near Surface Fractures in Clayey Tills**

1. To determine the distribution and properties of fractures in clayey glacial deposits. 2. To define possible processes by which fractures in clayey deposits were created. 3. To assess the geomechanical effects of clayey till fractures on the flow of leachate through the weathered zone.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$29 400

**START/*DÉBUT***: *1984 09* **END/FIN**: *1986 09*

## 0103-30

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Pesticide use inventory**

To determine the use pattern of pesticides in the Atlantic Region with specific reference to those chemicals likely to contaminate groundwater.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0103-31

Farquhar, G
McBean, E
(519) 885-1211

Department of Civil Engineering; University of Waterloo

**Behaviour, detection and control of hazardous immiscible liquid movement in soil**

To conduct laboratory scale experiments to study the movement, retention and control of hazardous immiscible liquids (HIL) in soil.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$172 700

**START/*DÉBUT***: *1987 04* **END/FIN**: *1990 03*

## 0103-32

Farvolden, R
Frind, E
(519) 885-1211

Institute for Groundwater Research; University of Waterloo

**Dispersion of the Stouffville Contaminant Plume**

1. To determine the hydrogeologic factors at the Stouffville site that are important in the development and dispersion of contaminant plumes that have been identified in previous work; 2. To decscribe the contaminant plumes, and their history; 3. To predict future development or dispersion of the plume(s). All modern techniques will be used to address this problem.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$42 900

**START/*DÉBUT***: *1986 04* **END/FIN**: *1988 11*

## 0103-33

Fein, J
Fu, P
(416) 922-5100

Diversified Research Laboratories Limited

**Technology Review of Biological Treatment of Trace Level Toxicants in Landfill Leachates**

To evaluate the current status of biological treatment technologies applied to toxic industrial leachates using a literature review and interviews.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$31 800

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 07*

## 0103-34

Fritz, P
(519) 885-1211

Department of Earth Sciences; University of Waterloo

**Contributions to the Understanding of the Sulphur Cycle in the Dorset Watershed**

The sulphur cycle in watersheds is initiated by fallout which subsequently interacts with the ecosystem in the soil and unsaturated zone. This portion of the cycle will be investigated with the aim to obtain information on the degree and/or type of precipitation of fallout sulphur in bio-geochemical reactions.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 300

**START/*DÉBUT***: *1986 03* **END/FIN**: *1987 04*

## 0103-35

Gélinas, P
Isabel, D
(418) 656-2411
Université Laval; Département de géologie

**Identification des enjeux environnementaux du programme d'équipement d'Hydro-Québec: l'enjeu des nappes d'eau souterraine.**

Etudier les effets environnementaux cumulatifs du programme d'équipement de la société Hydro-Québec, afin de permettre l'intégration des considérations environnementales au niveau de la planification stratégique de l'entreprise. Rapport disponible.

Financing/*Financement:* Hydro-Québec

$25 000

**START/*DÉBUT***: *1989 01* ***END/FIN***: *1989 05*

## 0103-36

Gillham, R
(519) 885-1211
University of Waterloo

**The carbon and sulfur cycle in shallow, unconfined, aquifer systems**

To gain a better insight into the role of organic carbon, both dissolved and solid, in redox processes that occur in shallow groundwater systems. The role and fluxes of carbon in two shallow unconfined aquifer systems near Alliston and Rodney will be assessed in light of sulfate reduction and denitrification processes that occu

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$68 500

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0103-37

Gorman, W
(613) 545-6176
Geological Science; Queen's University

**Development of sampling techniques to evaluate concentrations of gases in ground water**

unavailable

Financing/*Financement:* Ontario Ministry of the Environment

$30 450

**START/*DÉBUT***: *1984* ***END/FIN***: *1986 00*

## 0103-38

Grove, G
(306) 975-5741
Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater technology transfer**

To undertake field and/or office investigations with emphasis on specific problems related to the transfer of groundwater technology developed by research studies in the Division. To provide advice and assess the technical soundness of the groundwater component of external investigations.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0103-39

Grove, G
(306) 975-5741
Groundwater Division; National Hydrology Research Institute; Environment Canada

**Deep well disposal**

To understand the interactions occurring between the injected waste fluids and the host aquifer and consequently their influence on the migration of contaminants. To estimate the potential for transboundary flow of contaminants following injection into the deep subsurface.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0103-40

Grove, G
(306) 975-5741
Environment Canada; Inland Waters Directorate; National Hydrology Research Institute

**Pesticides and groundwater in Saskatchewan**

To assess the presence in groundwater of frequently used pesticides in the prairies.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$31 500

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0103-41

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Inhibition de la production microbienne d'acide sulfurique dans les environnements miniers.**

Empêcher la génération biologique d'acides minéraux forts à partir de l'oxydation des sulfures métalliques (pyrite, pyrrhotine) dans les stériles et rejets miniers. Etude de l'adhérence bactérienne aux surfaces minérales.

Financing/*Financement:* Fonds personnel

## 0103-42

Hay, D
(819) 953-1109
Environment Canada; Conservation & Protection; Industrial Programs Branch

**National Incinerator Testing and Evaluation Program (NITEP)**

Evaluation of energy from waste combustion and emission control technologies from an energy and environmental perspective. Development of guidelines.

Financing/*Financement:* Environment Canada, Conservation and Protection

Energy, Mines and Resources Canada

Department of Supply and Services Canada

Communitié urbaine de Québec

United States Environmental Protection Agency

$9 500 000

**START/*DÉBUT***: *1983 11* **END/FIN**: *1990 11*

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## 0103-43

Hennigar, T
(902) 426-3267

Environment Canada; Inland Waters Directorate

**Aquifer vulnerability study: Sheffield Farm Research Station, Kings County Nova Scotia**

To analyse for groundwater contamination in Nova Scotia, report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

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## 0103-44

Hern, J
none given

Dept. of Chemistry; Trent University

**Sulphate dynamics in Canadian soils**

none given

Financing/*Financement:* Ontario Ministry of Environment

$19 900

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

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## 0103-45

Hitchon, B
(403) 450-5113

Alberta Research Council

**Assessment of fluid-rock interaction, as related to subsurface waste disposal, in oil sands etc.**

To identify and assess the nature of man-imposed fluid-rock reactions in the oil sands and heavy oil areas of Alberta and adjacent areas.

Financing/*Financement:* Environment Canada, Conservation & Protection

$385 000

**START/*DÉBUT***: *1983 11* **END/FIN**: *1986 03*

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## 0103-46

Howard, H
(416) 284-3336

Division of Physical Sciences; University of Toronto

**Distribution, Origins & Behaviour of Local Shallow Groundwaters Containing High Levels of Chlorides**

1. To determine natural background levels of groundwater contaminants and identify their sources. 2. To determine chemical behaviour of groundwater contaminants, their migration and accumulation rates and to evaluate regional magnitude of the problem.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$80 600

**START/*DÉBUT***: *1984 10* **END/FIN**: *1987 12*

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## 0103-47

Howard, K
(416) 284-3336

University of Toronto; Scarborough Campus; Groundwater Research Group

**Development of a hydrologic model to predict the environmental fate of de-icing salts**

To develop a hydrologic salt & water balance model that will predict, on a catchment scale, the long-term environmental fate of many tens of thousands of tonnes of road de-icing chemicals applied annually to Ontario's highways, streets, paths & sidewalks. The model will be based on sound hydrologic principles & incorporate recent developments in our understanding of overland & shallow sub-surface contaminant flow processes (including mixing & ion exchange) ; consider application of NaCl, CaCl2 & consider the fate of Na & Ca, & Cl; be developed for a specific catchment(s), but will be sufficiently versatile & flexible for use in other catchments; predict long-term chemical changes of water quality in groundwaters, lakes & rivers; be developed for ease of use with the eventual user in mind.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$98 700

**START/*DÉBUT***: *1988 02* **END/FIN**: *1991 01*

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## 0103-48

Isabel, D
(418) 656-5155

Université Laval; Département de géologie

**Modélisation stochastique du transport des contaminants dans les eaux souterraines.**

Développer des modèles stochastiques utilisant une approche originale où la partie déterministe du modèle est dépourvue du terme de dispersion du deuxième ordre: identifier parmi les méthodes déterministes disponibles, celles qui sont les plus performantes et les combiner ensuite à une des méthodes stochastiques, de façon à obtenir un nouveau modèle stochastique. Les modèles ainsi développés sont validés avec des données recueillies sur le terrain.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$33 000

**START/*DÉBUT***: *1989 06* **END/FIN**: *1990 05*

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## 0103-49

Isabel, D
Gélinas, P
(418) 656-5155

Université Laval; Département de géologie

**Système expert pour les études hydrogéologiques au ministère des Transports du Québec.**

Développer un système expert capable d'analyser rapidement les données recueillies sur le terrain, ce, à l'aide de plusieurs logiciels conçus pour simuler à la fois l'écoulement souterrain, la zone d'influence de chaque puits situé à proximité d'une route et la vulnérabilité des aquifères à la contamination.

Financing/*Financement:* Québec, ministère des Transports

$177 513

**START/*DÉBUT***: *1990 01* ***END/FIN***: *1992 01*

## 0103-50

Jackson, R
(416) 336-4587

Rivers Research Branch; National Water Research Institute; Environment Canada

**Pesticide migration and fate in groundwater**

To investigate the transport and transformation of pesticide residues in groundwater.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$250 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1991 03*

## 0103-51

Jackson, R
(416) 336-4587

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Groundwater in Prince Edward Island**

To determine pesticide migration and fate in groundwater in P.E.I.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$22 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0103-52

Johnson, R
(403) 632-6761

Alberta Environmental Centre

**Water balance and sodic spoils**

To identify a vegetative (cropping) system of controlling soluble salt and sodium movement in reclaimed minespoils so that topsoils are not contaminated.

Financing/*Financement:* Alberta Environmental Centre

Alberta Heritage Savings Trust Fund

$380 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1994 03*

## 0103-53

Johnston, L
(306) 975-5745

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Facility for indoor aquifer testing (FIAT)**

To investigate the behaviour of atmospheric fluidized bed combustion wastes under simulated disposal conditions using the FIAT, in particular contaminant migration towards the water-table under climatic conditions present at the disposal site. To assess the effect of piezometer installation on groundwater chemistry. To assess the feasibility of using the FIAT to study pesticide migration and microbial activity in groundwater.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0103-54

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Demonstration of membrane cleanup technology in the Atlantic Region**

Treat contaminated water streams using ultrafiltration and reverse osmosis at selected sites in New Brunswick and Nova Scotia.

Financing/*Financement:* Environment Canada, Conservation & Protection

$25 000

**START/*DÉBUT***: *1989 10* ***END/FIN***: *1989 11*

## 0103-55

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Pervaporation as an environmental emergency countermeasure**

To investigate pervaporation for spill and leachate amelioration. Laboratory scale studies were followed by the design and construction of a mobile prototype and additional work is being performed to fine tune the unit.

Financing/*Financement:* Environment Canada, Conservation & Protection

$180 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1990 03*

## 0103-56

Kirk, D
(416) 978-7406

University of Toronto

**Determining the integrity of solidified wastes by large scale leach columns under environmental and controlled conditions**

To evaluate the leachability and determine the impact of municipal refuse interaction of solid industrial waste (steel

flue gas dust) with various solid waste/municipal waste combinations. The primary goal of the study is to quantify the rate of release and mobility of metal and organic species from the large column experimental test cells. The secondary goal is to predict the long term natural leaching of solid wastes.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$146 500

**START/*DÉBUT***: *1987 09* **END/FIN**: *1990 08*

## 0103-57

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Groundwater contamination in the Pacific Region**

To identify the extent of groundwater contamination in the Lower Fraser Valley aquifers.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

## 0103-58

Kwong, J
(306) 975-4719

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Freeze-thaw, soils and groundwater**

To investigate the effects of multiple freeze-thaw cycles on the chemical properties of soils and their implications for groundwater quality.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *ongoing*

## 0103-59

Kwong, J
(306) 975-4719

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Acid mine drainage**

To study water-rock interactions in acid mine drainage and determine the fate and transport of pollutants produced by mining activity in the natural environment.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *ongoing*

## 0103-60

Lagueux, J
(418) 656-7645

Université Laval; Département de médecine sociale et préventive

**Etude de faisabilité sur le développement d'une stratégie d'évaluation du potentiel génotoxique d'échantillons environnementaux.**

Proposer une stratégie d'évaluation de la génotoxicité des micropolluants de l'environnement par une batterie de bioessais in vitro. Justifier le choix des bioessais et décrire les protocoles. Proposer une méthode de validation en laboratoire des bioessais. Proposer un schéma décisionnel. Développer une stratégie de validation de la batterie par des études de population.

Financing/*Financement:* Québec, ministère de l'Environnement

$15 000

**START/*DÉBUT***: *1987 12* **END/FIN**: *1988 03*

## 0103-61

Lee, D
(519) 584-3311

University of Waterloo

**A study of geochemical modification of groundwater discharging into surface waters from an industrial disposal site**

The first objective is to determine changes in major ion chemistry during groundwater discharge at a major offshore discharge area in the St. Mary's River near a slag disposal site. The long-term objective is to develop and exercise new methods for assessing the impact of offshore contaminant plumes by providing quantitative data on solute transport and model predictions for a range of geochemical conditions in discharge zones.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$29 100

**START/*DÉBUT***: *1989 04* **END/FIN**: *1992 03*

## 0103-62

Lee, D
not available

Atomic Energy of Canada Ltd. Research Company

**Methods for Locating and Estimating Solute Loadings Through Groundwater Entering the St. Marys River**

Develop method for locating subsurface discharge of contaminated groundwater into rivers. If possible, quantify subsurface contaminant loading to St. Mary's River.

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$49 500

**START/*DÉBUT***: *1987 06*

## 0103-63

Leroueil, S
Larochelle, P
(418) 656-2601

Université Laval; Département de génie civil

**Etudes des aspects géotechniques des problèmes environnementaux: caractérisation des dépôts et mesure de la perméabilité.**

Le projet comporte trois volets complémentaires ayant comme objectif commun de donner des solutions pratiques fiables à l'ingénieur aux prises avec des problèmes de pollution. Le premier volet vise à améliorer la technologie du piézocône utilisé pour définir la stratigraphie des dépôts; le

deuxième, le développement de méthodes de mesure de la perméabilité et de méthodes d'interprétation fiables et le troisième concerne la perméabilité des mélanges sol-bentonite utilisés dans la construction de membranes d'étanchéité.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$91 000

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1989 05*

## 0103-64

Lesage, S
(416) 336-4597

Rivers Research Branch; National Water Research Institute; Environment Canada

**Toxic chemicals in groundwater**

Study the occurence and fate of toxic organic chemicals in groundwater. Performance Indicators: analysis and occurence of semi-volatile organic compounds in groundwater, submit MS to journal by Dec. 1989; groundwater quality beneath Sarnia, submit MS to journal by Sept. 1989; and develop capability to conduct anoxic biotransformation experiments at CCIW by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment Research Advisory Committee

$72 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

## 0103-65

Mackay, D
(416) 978-4019

Institute for Environmental Studies; University of Toronto

**Studies of environmental fate, effects and modelling of contaminants in the environment**

To gather and correlate physical-chemical data, measure transport rates in the environment and assemble mathematical models of contaminant behaviour as they migrate between air, water, soils and sediments.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1972 00*

## 0103-66

Major, D
(416) 671-2600

Beak Consultants Ltd.

**In situ biodegradation of chlorinated solvents as a remedial technology for contaminated groundwater**

To determine factors and processes governing in situ transformation and degradation of tetrachloroethylene in the groundwater at a chemical transfer facility, thereby furthering understanding of microbial processes at spill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$80 000

**START/*DÉBUT***: *1989 07* **END/*FIN***: *1991 06*

## 0103-67

Marsh, P
(306) 975-5752

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snowmelt run-off in permafrost basins**

To determine the rates of, and processes controlling: melt metamorphism and the vertical flux of water through the snow cover; exchange of water between the snowpack, active layer, and permafrost, and the rate of removal of the snow cover; the lateral movement of meltwater through the snow cover and the active layer to the stream channel; to apply this information modelling large scale snow processes; and study the release of pollutants from arctic snow covers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0103-68

McBride, R
(519) 824-4120

University of Guelph; Department of Land Resource Science

**Slow rate infiltration land treatment and recirculation of landfill leachate in Ontario**

To evaluate slow rate infiltration land treatment of leachate in forest and agricultural areas. To evaluate recirculation of leachate as partial treatment.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$447 400

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0103-69

McKague, K
(519) 886-0520

Ecologistics Limited

**Quantifying infiltration through municipal solid waste landfill covers**

Install lysimeters in landfill covers possessing distinct differences in soil texture. Accumulate data on landfill cover infiltration for the soil textures considered through rainfall simulation and continued monitoring of the installations. Modify an existing U.S. Environmental Protection Agency landfill cover water budget/leachate generation model to facilitate its use under Ontario conditions. Evaluate the usefulness of the modified model for predicting cover infiltration rates.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$121 900

**START/*DÉBUT***: *1989 07* **END/*FIN***: *1991 06*

## 0103-70

McNaughton, D
(306) 975-5735

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater pesticides studies in western Canada**

To determine the extent of pesticide contamination of groundwater in western Canada, through the investigation and documentation of the presence of pesticides in groundwater at selected study sites. To estimate the potential for groundwater contamination from pesticides by relating pesticide usage and chemical properties to distribution and properties of groundwater systems.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* **END/FIN**: *ongoing*

## 0103-71

Mooij, H
(416) 323-5160

Ontario Ministry of Environment; Waste Management Branch

**Landfill monitoring protocol development for Ontario**

To develop practicable recommendations to the Ministry of the Environment, based on expert concensus positions and documented present practices and procedures, for the development of landfill leachate and groundwater quality monitoring protocols and procedures.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$21 600

**START/*DÉBUT***: *1988 04* **END/FIN**: *1991 03*

## 0103-72

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Herbicide and nutrient loss using low-pressure irrigation systems**

Under conditions of low-pressure irrigation, determine the mobility and degradation of herbicides, pesticides and nutrients; the quantity and quality of leachate; and the degradation and leaching characteristics of herbicides, pesticides and nutrients.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/FIN**: *ongoing*

## 0103-73

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in fractured rock**

Investigate the controls on the velocity and dispersion of contaminants in fractured rock.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$150 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1991 03*

## 0103-74

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Hydrogeology of the Niagara frontier**

Investigate the hydrogeology of the Niagara frontier, continue monitoring of hydraulic head and geochemistry in study boreholes in Canadian network, with progress report by March, 1990. Conduct hydraulic tests in USGS boreholes with progress report by March, 1990. Continue developing theory and explanation for anomolous hydraulic head measurements in the Niagara region, progress report by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quailty

$55 000

**START/*DÉBUT***: *1984 04* **END/FIN**: *ongoing*

## 0103-75

Osborne, J
(416) 235-5759

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Evaluation of novel tracer compounds for the detection of underground leaks in fuel tanks**

Method evaluation. Implementation for routine operations. Provision of accurate QA/QC data.

Financing/*Financement:* Ontario Ministry of Environment

$50 000

**START/*DÉBUT***: *1989 01* **END/FIN**: *1991 01*

## 0103-76

Osborne, J
(416) 235-5759

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Development and Evaluation of Micro Extraction/ Clean-up techniques for Mobile Lab Implementation**

1. To adapt existing methodology for Mobile Operations 2. To investigate solid adsorbant extractants for field use.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$43 000

**START/*DÉBUT***: *1987 04*

## 0103-77

Osborne, J
(416) 235-5759

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Evaluation of purge, trap and headspace techniques for analysis of volatile organics in groundwater**

Validation and correlation of analytical techniques, field implementation and improved productivity.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$33 000

**START/*DÉBUT*:** *1987 05*

## 0103-78

Pinard, G
(514) 248-3321

MAPAQ de Bedford

**Utilisation de géotextiles à fine porosité (comme membrane d'imperméabilisation au sol) dans la construction de réservoir et plateforme à fumier en sol grossier et mince.**

Vérifier la faisabilité d'utiliser un géotextile pour fosse à lisier, construire à moindre coût une fosse à lisier.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$23 000

**START/*DÉBUT*:** *1987* **END/*FIN*:** *1990 04*

## 0103-79

Plamondon, A
(418) 656-2116

Université Laval; Département des sciences forestières

**Efficacité du drainage des milieux boisés humides.**

Mesurer les effets du drainage sylvicole sur le comportement de la nappe phréatique et sur la croissance des arbres à court terme. Vérifier l'applicabilité de deux modèles agricoles permettant la simulation de la hauteur de la nappe d'une part et la simulation des débits d'autre part, avec ou sans réseau de drainage.

Financing/*Financement:* Papeterie Reed Ltée

## 0103-80

Powell, M
(519) 925-3108

General Delivery

**Development of methods for the analysis of alkyl lead, tin and mercury compounds in effluent, surfaces and groundwater**

To develop a method for the measurement of alkyl lead, tin and mercury species such as tetraethyl lead, butyl tin and methyl mercury in water or liquid effluent samples.

Financing/*Financement:* Ontario Ministry of Environment

$65 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0103-81

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snowmelt run-off in permafrost wetlands**

Establish physical processes controlling snowmelt/run-off from permafrost wetlands (muskeg). Develop suitable hydrological models for this environment. Quantify major changes occurring in this hydrological regime as a result of climate change.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/*FIN*:** *ongoing*

## 0103-82

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Butane stripping as an environmental emergency countermeasure**

To investigate butane stripping as an environmental emergency countermeasure and build a unit if the process is more capable and economic than steam stripping. Bench scale unit has been built and will be tested at River Road Labs. in 1990-91.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$252 218

**START/*DÉBUT*:** *1987 08* **END/*FIN*:** *1989 08*

## 0103-83

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Steam stripping as an environmental emergency countermeasure**

A feasibility study has been completed and a report written. A mobile pilot plant was constructed and will be tested in May 1990 at a groundwater site.

Financing/*Financement:* Environment Canada, Conservation & Protection

$240 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0103-84

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Impact of potash tails piles on groundwater**

To determine the movement of brine into aquifers under potash tails piles. Final reports available.

Financing/*Financement:* Potash Corporation of Saskatchewan

Canada Centre for Mineral & Energy Technology (EMR)

$258 000

**START/*DÉBUT*:** *1982 04* **END/*FIN*:** *1986 12*

## 0103-85

Ribo, J
(306) 975-5789

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Organic contamination in groundwater**

To understand the environmental behaviour of organic contaminants (pesticides and industrial chemicals) in groundwater systems. This includes the assessment of the toxicity of potential organic contaminants and also the study of the influence of soil and water properties on their physicochemical properties (adsorption, transport, degradation, persistence), and on the toxic effects to non-target organisms.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *1989*

## 0103-86

Ridley, K
(306) 975-5747

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Landfills**

To study contaminant transport in general utilizing a landfill site as a point source. The study will include leacate/clay mineral interaction, diffusion, large scale infiltration field test, fracture flow, modelling, and installation of a leachate collection well, suction lysimeter soil matrix potential instrumentation, standpipe piezometers and neutron probe access tubes. To make recommendations for further research for an ongoing study program, anticipated that this program will be active for many years.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *1989*

## 0103-87

Rollin, A
(514) 340-4922

Chemical Engineering; Ecole Polytechnique

**Développement d'un nouveau système de fosse septique incorporant des géosynthétiques**

A incorporer des géotextiles et des géodrains à la fois au niveau d'un noveau type de bioréacteur anaérobic et dans le champ d'épuration des effluents.

Financing/*Financement:* Environment Canada, Conservation and Protection

Societe québécoise d'assainissement des eaux

Hydro Québec

Texel Inc.

Les Réservoirs Granby Inc.

$297 000

**START/*DÉBUT***: *1988 12* **END/FIN**: *1991 12*

## 0103-88

Rollin, A
(514) 340-4922

Chemical Engineering; Ecole Polytechnique

**Study of the relationship between biofilm development and geotextile structures**

To study biofilm development on synthetic textiles (geotextiles) leading to the design of proper cloth media in the treatment and disposal of domestic wastewater onsite. Final report unpublished (precompetitive research protected), 'Study of the Relationship Between Biofilm Development and Geotextile Structures', A. Rollin and H. Brisson, Chemical Engineering Dept., Ecole Polytechnique de Montréal.

Financing/*Financement:* Environment Canada, Conservation & Protection

$23 635

**START/*DÉBUT***: *1988 01* **END/FIN**: *1988 10*

## 0103-89

Rouleau, A
(418) 545-5213

Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Hydrogéologie des zones de faille et de cisaillement dans les régions du Saguenay et des Territoires-du-Nouveau-Québec (Chibougamau).**

Evaluation statistique de la géométrie des discontinuités secondaires reliées aux zones de faille; évaluation du rôle de ces discontinuités sur la perméabilité des zones de faille; évaluation de l'effet de ces zones sur l'hydrogéologie régionale, en relation avec l'entreposage de déchets toxiques ou radioactifs. Vérifications effectuées sur le terrain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$24 000

**START/*DÉBUT***: *1988* **END/FIN**: *1990 04*

## 0103-90

Rouleau, A
(418) 545-5213

Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Caractérisation hydrogéologique du substratum fissuré de Ville Mercier en vue de sa dépollution.**

Déterminer la géométrie du système de fractures traversant ces formations. Mesurer la perméabilité de ces formations et sa distribution spatiale. Evaluer l'importance relative de la perméabilité de fracture et la perméabilité de matrice.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

Canada, ministère de l'Environnement

$23 000

**START/*DÉBUT***: *1988* **END/FIN**: *1989 04*

## 0103-91

Rouleau, A
(418) 545-5213

Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Caractérisation et modélisation hydrogéologique de massifs rocheux fracturés.**

L'écoulement de l'eau souterraine et le transfert de polluants dans des massifs rocheux fracturés prennent place surtout dans les réseaux de fractures. Nous visons à développer des méthodes efficaces de caractérisation 1) de la géométrie des réseaux de fractures et 2) du comportement hydraulique de massifs rocheux. Nous développons des modèles probabilistes qui intègrent les données de terrain et qui simulent l'écoulement et le transfert de polluants dans des massifs rocheux fracturés.

Financing/*Financement:* Fonds institutionnel de recherche

Québec, ministère de l'Enseignement supérieur et de la Science

$8 200

## 0103-92

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Etude hydrogéologique.**

Le but de cette étude était d'évaluer la qualité et le déplacement de l'eau souterraine aux sites de disposition d'Alcan à Jonquière.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$1 200 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1988*

## 0103-93

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Etudes hydrogéologiques (IM et Shaw)**

Connaître l'impact des opérations de la compagnie Alcan sur les nappes d'eau souterraines.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$100 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1988 12*

## 0103-94

Schmidt, J
Booth, R
(416) 336-4541

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of leachate/contaminated groundwaters from landfills and industrial sites**

To assess existing treatment technologies and develop and demonstrate technically feasible, cost-effective technologies for the treatment of leachate or contaminated groundwater from landfills. To provide technical support and technical advice. Interim publications available from project investigators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Toxics Program Funding

$2 257 000

**START/*DÉBUT***: *1983* **END/*FIN***: *ongoing*

## 0103-95

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Field sampling to monitor impacts resulting from in-situ heavy oil subsurface disposal practices**

To develop and estimate costs associated with the geologic, hydrogeologic and hydrogeochemical sampling and testing component of a field program to monitor the potential impact of waste fluid injection in the vicinity of Cold Lake, Alberta. Report copies are still available.

Financing/*Financement:* Panel on Energy Research & Development

$45 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1987 06*

## 0103-96

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of oilfield wastes by land application: environmental effects and future land use**

To assess the potential environmental impact of oily waste application to land (ie: groundwater contamination, plant uptake of contaminants). To examine the causes and practical constraints which would inhibit the restoration of land treatment sites.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Environment, Groundwater Protection Branch

$400 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1990 03*

## 0103-97

Seguin, M
(418) 656-2196

Université Laval; Centre d'études nordiques

**Incidence des feux de forêt sur la distribution du pergélisol.**

La distribution géographique des indicateurs de pergélisol, phénomènes périglaciaires, suggère que le couvert végétal exerce une influence déterminante sur le pergélisol en créant un régime d'enneigement favorable ou pas à la pénétration de l'onde de gel. Le but de cette recherche est de préciser l'influence thermique du couvert forestier sur le sol

et d'évaluer l'âge maximum du pergélisol en fonction de la déforestation des sites par les feux naturels.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0103-98

Sherry, J
(416) 336-4813

Environment Canada; National Water Research Institute

**Screening technique for the detection of triazine herbicides in surface and groundwater**

To develop a battery of screening tests for the detection of a range of pesticides. Report by the end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0103-99

Smart, C
(519) 679-2111

University of Western Ontario; Geography Department

**Alpine hydrology**

Identifying and describing alpine drainage systems in glaciers, karst groundwater systems, fracture and debris aquifers.

Financing/*Financement:* Natural Sciences & Engineering Research Council

University of Western Ontario

$200 000

**START/*DÉBUT***: *1984 08*

## 0103-100

Smith, D
(613) 836-2594

Water and Earth Science Associates Ltd.

**A Field Evaluation of the Overland Flow Method for the Removal of Organic Compounds from Groundwater**

Provide a proven low cost treatment alternative for part per billion range volatile, non-volatile, organic compounds derived from groundwater remedial sites. Concentrations must be reduced to levels acceptable for surface discharge into receiving water bodies. The system will also provide a means by which iron may be eliminated from discharge streams without expensive pre-treatment.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 03*

## 0103-101

Thomas, G
Smith, D
(416) 822-4111

Ontario Research Foundation

**Mutagenicity testing of leachates from waste disposal sites**

To develop methods based on the Ames Salmonella Mutagenicity Assay to detect potentially harmful contamination of groundwater supplies by genotoxic substances leached from landfill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$300 000

**START/*DÉBUT***: *1984 09* ***END/FIN***: *1990 08*

## 0103-102

Trudell, M
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Hydrodynamics of soil salinization in east-central Alberta**

To evaluate the role of shallow groundwater flow systems in the redistribution of soluble salts, and to assess the scale over which the redistribution of salts occurs in the Prairies.

Financing/*Financement:* Alberta Research Council

$593 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0103-103

Trudell, M
Ched, D
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Assessment of potential groundwater contamination by migration of enhanced oil recovery (EOR) production fluids**

To evaluate the potential for contamination of shallow aquifers by production fluids from enhanced oil recovery.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Alberta Research Council

$58 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0103-104

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Etude des boues des eaux usées: effet des pluies acides et de l'incinération sur leur contenu en métaux lourds.**

Evaluer l'impact des pluies acides et de l'incinération sur les boues issues du traitement des eaux usées. Objectifs: reproduire en laboratoire les conditions naturelles de la lixiviation des boues par les pluies acides; étudier les mécanismes des transformations chimiques que subissent les métaux et leurs oxydes lors de l'incinération des boues des eaux usées.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$20 000

## 0103-105

Turnbull, D
(705) 726-7411

International Water Supply Ltd.

**Township of Ignace Groundwater Quality Identification**

Determine the feasibility of the Vyredox In-ground Biological Treatment for removing iron, manganese, and hydrogen sulphide from ground water before reaching the production wells at Ignace in Northern Ontario.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$45 600

**START/*DÉBUT***: *1986 04*

## 0103-106

Vandenberg, A
(306) 975-5746

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Contaminant transport modelling**

To improve knowledge about transport and fate of contaminants in groundwater. To adapt predictive models to reflect the improved knowledge.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/FIN**: *ongoing*

## 0103-107

Villeneuve, J
Campbell, P
(418) 654-2524

Université du Québec; INRS-eau

**Problématique de la contamination des eaux souterraines par les pesticides au Québec.**

Identifier les caractéristiques du milieu qui contrôlent le mouvement des pesticides vers et dans les nappes souterraines; identifier les caractéristiques des pesticides qui contrôlent leur évolution vers et dans les nappes souterraines; présenter des modèles de déplacement des pesticides vers et dans les nappes souterraines; à titre d'illustration, évaluer le devenir de quatre pesticides (atrazine, 2, 4-D, carbofurane et chlordane , etc.).

Financing/*Financement:* Québec, ministère de l'Environnement

$18 900

**START/*DÉBUT***: *1984* **END/FIN**: *1985 04*

## 0103-108

Villeneuve, J
Campbell, P
(418) 654-2532

Université du Québec; INRS-eau

**Développement d'un nouvel outil simple et adaptable pour l'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides.**

Réaliser un logiciel d'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides. Cet outil repose sur la modélisation stochastique du transfert des pesticides dans la zone non-saturée. Ce logiciel fonctionne sur IBM-Pc et compatible.

Financing/*Financement:* Canada, ministère de l'Environnnment

Fondation Donner

$317 000

**START/*DÉBUT***: *1986* **END/FIN**: *1987*

## 0103-109

Villeneuve, J-P
(418) 654-2532

INRS - EAU

**Vulnérabilité des eaux souterraines à la contamination par les pesticides**

D'établir une méthodologie d'évaluation du potential de vulnérabilité des eaux souterraines à la contamination par les pesticides. On a développé le modéle 'Vulpest', qui permet d'effectuer la simulation stochastique du cheminement de la contamination dans la zone vadose. Sont disponibles: le rappor final en français, une synthèse en français et en anglais, et le logiciel Vulpest, version 2.0 avec son manuel d'utilisation.

Financing/*Financement:* Environnement Canada, Conservation et protection

Ministère d'approvisionnements et services Canada

$151 959

**START/*DÉBUT***: *1985 09* **END/FIN**: *1987 03*

## 0103-110

Viraraghavan, T
(306) 584-4709

University of Regina

**Anaerobic filter treatment of septic tank effluent at low temperatures**

To evaluate the performance of anaerobic septic tank effluent treatment filters operating at 5oC, 10oC and 20oC during startup and subsequently at various hydraulic retention times (HRT) to examine the applicability of the process to Canadian climatic conditions. Final report unpublished by CMHC, 'Anaerobic Filter Treatment of Septic Tank Effluent at Low Temperatures', T. Viraraghaven and K. Dickenson, Faculty of Engineering, University of Regina, Regina, Saskatchewan, March 1988.

Financing/*Financement:* Canadian Mortgage & Housing Corporation

$25 999

**START/*DÉBUT***: *1986 04* **END/FIN**: *1988 03*

## 0103-111

Waite, D
(306) 780-6438

Environment Canada; Conservation and Protection; Environmental Protection

**Persistence and movement of picloram herbicide in a northern Saskatchewan watershed**

To measure the persistence of picloram on the Jummy Lake Air Weapons Range and the movement of the chemical off of the target site. Reports completed.

Financing/*Financement:* Department of National Defence

$60 000

**START/*DÉBUT***: *1982 08* ***END/FIN***: *1987 03*

## 0103-112

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Mobile reverse osmosis/adsorption system as an environmental emergency countermeasure**

A mobile system was developed and tested. Very good results were achieved on organic chemical contaminated leachates and surface water at a petrochemical distribution terminal. The system was used to clean up the aqueous residue from a pesticide warehouse fire in Canning N.S. Reports were presented at the 1987 Technical Seminar on Chemical Spills.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Dow Chemical Inc

$280 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1987 07*

## 0103-113

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Investigation of a mobile solvent extraction system as an environmental emergency countermeasure**

To investigate the concept of a mobile system; design and construct the system.

Financing/*Financement:* Environment Canada, Conservation and Protection

$80 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1990 06*

## 0103-114

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Detection of lakeshore subsurface inflows from septic tanks and their effects on lake water quality**

To utilize a boat mounted fluorometer system for foreshore scanning of lake water near the lake bottom, and for sampling lake water to determine locations of inflows and possible effects of septic tank drainfields on water quality.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

**START/*DÉBUT***: *1985*

## 0103-115

Williamson, D
(204) 945-7030

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Hexazinone (Velpar-L) monitoring of groundwater in Agassiz Provincial Forest**

To monitor the fate and distribution of hexazinone in groundwater following application for forestry management. This work has been accepted for publication: Williamson, D.A. 1989. Hexazinone residues in surface and groundwater at two sites within Agassiz Provincial Forest, Manitoba, Canada. Water Pollution Research Journal of Canada (23) 3:?

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

$45 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 05*

## 0103-116

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Company

**Geotechnical monitoring of the Norman Wells pipeline**

To determine the effect of pipeline construction and operation on terrain conditions. Progress reports are available for viewing at the National Energy Board, Ottawa.

Financing/*Financement:* Interprovincial Pipe Line Company

$2 000 000

**START/*DÉBUT***: *1984 01*

# RECLAMATION

# *RESTAURATION*

## 0104-1

Acott, G
(403) 692-3763

Cardinal River Coals, Ltd.

**Coal mine reclamation to Rocky Mountain Bighorn sheep habitat**

To document seasonal use and behavioural patterns of Rocky Mountain Bighorn sheep on the minesite and redirect the focus of the reclamation process to complement that useage.

Financing/*Financement:* Cardinal River Coals, Ltd.

$30 000

**START/*DÉBUT***: *1985 09* **END/*FIN***: *1987 03*

## 0104-2

Beckett, P
(705) 675-1151

Laurentian University; Biology

**Tree establishment on acid metal contaminanted soils in Sudbury, Ontario**

Restoration of damaged land to improve aesthetic quality of living in an urban environment. Reports are available.

Financing/*Financement:* Employment and Immigration Canada

Ontario Ministry of Northern Mines and Development

Regional Municipality of Sudbury

$64 000

**START/*DÉBUT***: *1979*

## 0104-3

Clulow, V
(705) 675-1151

Laurentian University; Biology

**Radionuclides in fish, water, and sediments of lakes near Elliot Lake Ontario**

Measurement of Ra, Po, Pb, Th, U in tissues of fish and calculation of transfer parameters from environment and risk to human consumers. To be published as AECB report.

Financing/*Financement:* Atomic Energy Control Board

**START/*DÉBUT***: *1989 07* **END/*FIN***: *1989 12*

## 0104-4

Côté, L
(418) 653-9368

Paquet, Dutil et associés; Division agro-alimentaire et environnement

**Prospectives d'utilisation et d'aménagement des plaines inondables**

Analyser les diverses techniques d'aménagement agricoles et fauniques en milieu riverain et développer de nouveaux modèles d'aménagement qui favorisent une utilisation agricole de la plaine inondable tout en protégeant la flore et la faune.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$98 290

**START/*DÉBUT***: *1986 08* **END/*FIN***: *1987 12*

## 0104-5

Danielson, R
Okazawa, N
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Landtreatment of oily waste sludges**

To determine the effects of landtreatment with oily wastes on the long term use of the land for agronomic purposes, to determine the uptake of undesirable organic compounds and heavy metals by crops, to determine the effects of landtreatment on surface and groundwater quality and to determine the effectiveness of landtreatment as a disposal method for oilfield wastes. Reports available.

Financing/*Financement:* Canadian Petroleum Association

Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986 01*

## 0104-6

Dempster, W
(403) 451-4611

W.R. Dempster & Associates Ltd.

**Reforestation field trials on Obed simulated mining sites**

Annual reports available. 1. To satisfy government recommendations that on-site research plots be established to gain knowledge of growth potential of reconstructed soil profiles. 2. To provide simulated post mining sites in order to undertake an acceptable research program that will effectively monitor seedling growth. 3. To test & decide on feasible methods of lift removal, storage and return.

Financing/*Financement:* Obed Mountain Coal Company Limited

**START/*DÉBUT***: *1981 05* **END/*FIN***: *1986 09*

## 0104-7

Désy, J
Gauthier, M
(418) 545-5346

Université du Québec à Chicoutimi; Département des sciences humaines

**FORESPOIR: Dégradation et revalorisation des espaces forestiers au Québec: le cas de la Sagamie.**

Le présent projet se veut une contribution multidisciplinaire et globale à certaines questions cruciales que pose l'état de notre forêt et son mode de gestion, passé et actuel, tout en proposant quelques solutions d'avenir pour en faire un riche patrimoine collectif: valorisation de la biomasse forestière résiduelle; récupération des bois noyés; stratégies coopératives communautaires; profils de formation alternative en foresterie; état et utilisation potentielle de la forêt; passif environnemental des premiers gestionnaires de la forêt.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation UQAC

Coopérative forestière de Girardville

$130 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1990 05*

## 0104-8

Divic, S
Hodson, M
(416) 979-5345

Ryerson Polytechnical Institute

**Production of a digital elevation model on Ryerson's Gestalt photo mapper**

Accuracy comparison of manually compiled contour lines and the Gestalts D.E.M. generated contour lines.

Financing/*Financement:* Ontario Ministry of Natural Resources

$15 000

**START/*DÉBUT***: *1987 09*

## 0104-9

England, S
(403) 260-7738

Mobil Oil Canada Ltd.

**Reclamation trials for Lone Pine Creek sulphur storage area, Mobil Oil Canada, Ltd.**

To determine the effectiveness of powdered vs pelletized lime as well as the incorporation of organic matter as amendments to soils contaminated by elemental & oxidized sulfur, as exist on reclaimed sulfur basepad sites. Focus on practical application techniques, using locally available equipment. Final report March 1988.

Financing/*Financement:* Mobil Oil Canada Ltd.

$46 000

**START/*DÉBUT***: *1986 06*

## 0104-10

Hammond, B
(403) 427-3943

Alberta Environment

**Federal-provincial decommissioning workshop recommendations**

To provide the recommendations from the decommissioning workshop, which reviewed contaminant issues arising out of industrial site decommissioning.

Financing/*Financement:* Alberta Environment

$5 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1987 03*

## 0104-11

Hermesh, R
(403) 632-6761

Alberta Environmental Centre

**Native plant species for land reclamation**

To select, develop, test and register lines of native plant species suitable for use in the reclamation of disturbances in high-stress environments.

Financing/*Financement:* Alberta Environmental Centre

Environment Canada Parks

**START/*DÉBUT***: *1984 01*

## 0104-12

Hyne, J
(403) 220-5372

University of Calgary; Alberta Sulphur Research Ltd.

**Contaminated sulphur recovery and site rehabilitation**

A study of the recovery of contaminanted sulphur from inventory block base pads & rehabilitation of the site.

Financing/*Financement:* Alberta Sulphur Research Ltd.

$245 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1987 04*

## 0104-13

Johnson, R
(403) 632-6761

Alberta Environmental Centre

**Water balance and sodic spoils**

To identify a vegetative (cropping) system of controlling soluble salt and sodium movement in reclaimed minespoils so that topsoils are not contaminated.

Financing/*Financement:* Alberta Environmental Centre

Alberta Heritage Savings Trust Fund

$380 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1994 03*

## 0104-14

Johnson, R
James, W
(403) 632-6761

Alberta Environmental Centre

**Inventions and methods in soil science and land reclamation**

To develop requirements, instrumentation and methods for research and monitoring in soil science and land reclamation. Reports and papers available on: automated root washer, computerized root image analysis system, cone pene-

trometer for soil compaction, hydraulic conductivity cell, method for extracting oil from soils and soil grinding machine.

Financing/*Financement:* Alberta Environmental Centre

Alberta Environment

Alberta Heritage Savings Trust Fund

$250 000

**START/*DÉBUT*:** *1983 09*

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## 0104-15

Kershaw, G
(403) 492-4408

University of Alberta; Department of Geography

**Studies of the environmental effects of disturbances in the subarctic (SEEDS)**

1. Quantify the ecological effects of a transport corridor. 2. Establish and evaluate test reclamation treatments. 3. Produce a model with predictive capabilities.

Financing/*Financement:* Canadian Forestry Service

ESSO Canada Resources

Boreal Institute for Northern Studies

$80 000

**START/*DÉBUT*:** *1984 06*

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## 0104-16

Lemieux, G
(418) 656-2837

Université Laval; Département des sciences forestières

**Humification in situ du bois raméal de diverses essences forestières et son influence sur le sol.**

Mise en valeur d'une ressource abondante susceptible d'avoir un impact en agriculture sur l'utilisation des engrais ainsi que sur le cycle des éléments en foresterie. Rapport disponible.

Financing/*Financement:* Fonds personnel

**START/*DÉBUT*:** *1983 04* **END/*FIN*:** *1995 04*

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## 0104-17

Mackenzie, L
(403) 427-3943

Alberta Environment

**University of Calgary's master student phosphogypsum study**

To obtain background information on the environmental aspects of phosphogypsum ponds and to recommend a preliminary plan for site assessment and investigation of an Alberta phosphogypsum pond.

Financing/*Financement:* Alberta Environment

$10 000

**START/*DÉBUT*:** *1986 07* **END/*FIN*:** *1987 03*

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## 0104-18

Macyk, T
(403) 438-7516

Alberta Research Council

**Measurement of change in reconstructed soils at the Paintearth mine (1983-87)**

To monitor the physical and chemical properties of reconstructed soils to determine what changes, if any, were occurring and the impact, if any, of these changes on long-term soil quality and productivity.

Financing/*Financement:* Alberta Research Council

Luscar Ltd.

$120 000

**START/*DÉBUT*:** *1983 10* **END/*FIN*:** *1988 03*

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## 0104-19

Mallory, G
(416) 361-0794

BP Resources Canada Ltd.; Mining Divison

**Ecological engineering and biological polishing methods and assessment towards controlling contaminants from an abandoned base metal mine**

To assess the feasibility & effectiveness of various ecological engineering methods to control surface and subsurface water movements, and enhance biological polishing of metal contaminants, at the abandoned South Bay copper/zinc mine in Northern Ontario. Monitoring continues to 1992.

Financing/*Financement:* British Petroleum Resources Canada Limited

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1989 12*

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## 0104-20

McKague, K
(519) 886-0520

Ecologistics Limited

**Quantifying infiltration through municipal solid waste landfill covers**

Install lysimeters in landfill covers possessing distinct differences in soil texture. Accumulate data on landfill cover infiltration for the soil textures considered through rainfall simulation and continued monitoring of the installations. Modify an existing U.S. Environmental Protection Agency landfill cover water budget/leachate generation model to facilitate its use under Ontario conditions. Evaluate the usefulness of the modified model for predicting cover infiltration rates.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$121 900

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1991 06*

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## 0104-21

Narasiah, S
(819) 821-7109

Université de Sherbrooke; Département de génie civil

**Restauration du parc à résidus de la East Sullivan par l'utilisation de résidus organiques**

Offrir une contribution valable à la résolution d'un problème de gestion des boues de la ville de Val d'Or, de gestion de résidus forestiers et de réaménagement de résidus miniers de la région.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$33 100
**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 02*

## 0104-22

Powter, C
(403) 427-4147
Alberta Environment

**Future research needs project**

To identify future reclamation research needs using a questionnaire/ interview format.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$22 500
**START/*DÉBUT***: *1988 11* ***END/FIN***: *1990 10*

## 0104-23

Powter, C
(403) 427-4147
Alberta Environment

**Update of plant species suitability manual**

To update RRTAC report 80-5, adding new information on species in manual and adding new species suitable for reclamation use in Alberta.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Recreation, Parks & Wildlife Foundation (Alberta)

$30 000
**START/*DÉBUT***: *1989 02* ***END/FIN***: *1990 08*

## 0104-24

Powter, C
(403) 427-4147
Alberta Environment

**Soil compaction on oil and gas wellsites**

To identify methods of measuring compaction to determine levels of compaction on wellsites, and to establish and monitor test plots to evaluate effects of various levels of compaction on crop growth.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Alberta Environmental Centre

$172 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1992 03*

## 0104-25

Powter, C
(403) 427-4147
Alberta Environment

**Biological dewatering of oil sand tailings sludge**

To evaluate methods, including freeze/thaw and evapotranspiration, that may be used to dewater oil sands tailings sludge. Interim report and several scientific papers are available.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Alberta Environmental Centre

Syncrude Canada Ltd.

$337 500
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0104-26

Powter, C
(403) 427-4147
Alberta Environment

**Disposal of drilling wastes**

Develop safe methods of waste disposal and return land to a condition capable of sustaining the final land use. (Reports available: RRTAC 87-1, 87-3, 88-10).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Alberta Research Council

$244 175
**START/*DÉBUT***: *1986* ***END/FIN***: *1989 00*

## 0104-27

Powter, C
(403) 427-4147
Alberta Environment

**Reinstatement of biological activity in reconstructed soils**

The nature of microorganism was investigated in a series of field and laboratory studies. Emphasis centered on fungal decomposers and mycorrhizial fungi and the influence of various amendments on their populations. (Reports available: RRTAC 84-4, 88-3, 88-5).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Alberta Environment

$911 800
**START/*DÉBUT***: *1978* ***END/FIN***: *1987 00*

## 0104-28

Powter, C
(403) 427-4147
Alberta Environment

**Oil sands soil reconstruction project**

Review literature to determine suitable rooting media for trees, shrubs and grass/legume mixes. Construct and monitor plots to evaluate survival/growth of 10 tree/shrub species on amended tailing sand plots. (Reports available: RRTAC 83-1).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$461 958
**START/*DÉBUT***: *1982* ***END/FIN***: *1991 00*

## 0104-29

Powter, C
(403) 427-4147
Alberta Environment

**Mountain and foothills hydrology**

Design of sediment ponds to control water flows and siltation of surrounding waters. (Reports available: RRTAC 86-1).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Coal Association of Canada

$69 000

**START/*DÉBUT*:** *1984* **END/FIN:** *1987 00*

## 0104-30

Powter, C
(403) 427-4147
Alberta Environment

**Reclamation for wildlife habitat in the mountains and foothills of Alberta**

Review current information on wildlife habitat in the mountain and foothills biomes, wildlife reclamation techniques, potential problems in wildlife habitat reclamation and potential assessment methodologies. Needs for further research were also identified. (Reports available: RRTAC 86-9, 88-1).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Coal Association of Canada

$49 500

**START/*DÉBUT*:** *1984* **END/FIN:** *1987 00*

## 0104-31

Powter, C
(403) 427-4147
Alberta Environment

**Growth performance of commercial tree species in reclamation**

Review and report from available literature, growth performance data that could be used to develop standards expected of commercial timber species for reclaimed lands in the Eastern Slopes of Alberta and selection of a suitable growth performance measure and field data collection in the Eastern Slopes. (Reports available: RRTAC 88-7).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Coal Association of Canada

$77 300

**START/*DÉBUT*:** *1984* **END/FIN:** *1987 00*

## 0104-32

Powter, C
(403) 427-4147
Alberta Environment

**Soil reconstruction in mountain and foothill coal mining**

Review the literature and determine how to construct a suitable root zone over rocky and nutrient-poor spoils. (Reports available: RRTAC 87-2).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Coal Association of Canada

$61 550

**START/*DÉBUT*:** *1984* **END/FIN:** *1986 00*

## 0104-33

Powter, C
(403) 427-4147
Alberta Environment

**Selection of native grasses for reclamation**

To select lines of native grasses which are known to invade disturbances and meet objectives without long-term maintenance.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$619 800

**START/*DÉBUT*:** *1979*

## 0104-34

Powter, C
(403) 427-4147
Alberta Environment

**Revegetation of ash disposal sites**

Identified the thickness of capping material over coal ash required to support an erosion controlling cover crop. Reports available from Alberta Research Council.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$78 100

**START/*DÉBUT*:** *1979* **END/FIN:** *1986 00*

## 0104-35

Powter, C
(403) 427-4147
Alberta Environment

**Mountain and foothill dump design**

Identify practical construction and resloping strategies, and the volumes of erosional loss on various slope angles, lengths, berms and topsoiling. (Reports available: RRTAC 87-8).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$143 062

**START/*DÉBUT*:** *1982* **END/FIN:** *1986 00*

## 0104-36

Powter, C
(403) 427-4147
Alberta Environment

**Use of bottom ash as an amendment to sodic spoil**

Test the use of bottom ash as an amendment to sodic spoil. Determine the best rate and method of application in terms

of reducing the effects of excess sodium and promoting vegetative growth. (Reports available: RRTAC 87-7).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$37 400

**START/*DÉBUT*:** *1983* **END/FIN:** *1986 00*

## 0104-37

Powter, C
(403) 427-4147

Alberta Environment

**Plains hydrology and reclamation project**

To describe what happens to ground water during and after reclamation and how to rebuild the landscape to maximize the agricultural potential. (Reports available: RRTAC 86-2 to 86-7, 87-9 to 87-13, 88-2, 88-4, 88-9, 88-12).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

Alberta Research Council

$8 000 000

**START/*DÉBUT*:** *1979* **END/FIN:** *1987 00*

## 0104-38

Powter, C
(403) 427-4147

Alberta Environment

**Highvale soil reconstruction project**

Evaluation of grain and forage yields on a series of soil reconstruction plots using a variety of treatments. Salt movement over spoil slopes is also being studied. (Reports available: RRTAC 88-11).

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$/50 809

**START/*DÉBUT*:** *1982* **END/FIN:** *1993 00*

## 0104-39

Powter, C
(403) 427-4147

Alberta Environment

**Battle River soil reconstruction project**

Evaluation of grain and forage yields on a series of soil reconstruction plots using a variety of treatments. Salt movement over soil slopes is also being studied.

Financing/*Financement:* Alberta Heritage Savings Trust Fund

$827 234

**START/*DÉBUT*:** *1979* **END/FIN:** *1992 00*

## 0104-40

Pryce, D
(403) 237-1312

BP Canada Inc.

**KC1-polymer drilling mud disposal project (reclamation and waste disposal)**

Research and operational trials to establish: 1. optimum salt-loading rates for mud disposal on clay-till soils (land spreading) and 2. alternate strategies for salt-based mud disposal.

Financing/*Financement:* British Petroleum Canada Inc.

$400 000

**START/*DÉBUT*:** *1984* **END/FIN:** *1990 00*

## 0104-41

Regier, M
(403) 381-5322

Alberta Environment

**Reclamation of sulphur contaminated soils**

To determine the amount of elemental sulphur that can be left in soil and be amended with calcium carbonate without significantly adverse soil or vegetation.

Financing/*Financement:* Alberta Environment

Gulf Canada Corporation

Canterra Energy

$95 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988 00*

## 0104-42

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of oilfield wastes by land application: environmental effects and future land use**

To assess the potential environmental impact of oily waste application to land (ie: groundwater contamination, plant uptake of contaminants). To examine the causes and practical constraints which would inhibit the restoration of land treatment sites.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Environment, Groundwater Protection Branch

$400 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1990 03*

## 0104-43

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental implications of land application of diesel invert drill cutting residues**

To determine whether diesel invert drill cutting residues can be applied to soil (ie: land treatment) at a practical and environmentally acceptable application rate. To determine the most cost-effective toxicity amending substrate to add to

the soil/ drilling residue mixture. Five year project is now complete, final report is in the last stage of review.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

$334 000

**START/*DÉBUT*:** *1984 09* **END/FIN:** *1989 03*

## 0104-44

Stelzig, A
(819) 953-1134

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Review of current cleanup criteria, methodology for establishing cleanup criteria**

Report submitted to CCREM, March 1987 - 'Inventory of Cleanup Criteria and Methods to Select Criteria' (IP-71). Develop a methodology for establishing site specific cleanup criteria for application across Canada. Final report will be submitted to CCREM in September 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Alberta Environment

Ministere de l'Environnement du Quebec

$800 000

**START/*DÉBUT*:** *1987 02* **END/FIN:** *1988 09*

## 0104-45

Thacker, D
(403) 632-6761

Alberta Environmental Centre

**Weathering of soils and spoils**

To evaluate the long term consequences of exposing geological materials on land surfaces near the Rocky Mountains where land reclamation and surface water management necessitate control over the chemical and physical environment. The final report is available and one scientific paper.

Financing/*Financement:* Alberta Environmental Centre

Luscar Ltd.

$60 000

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1987 06*

## 0104-46

Tuttle, S
(403) 743-6442

Suncor Inc.

**Tree rooting study**

To determine the degree of root penetration from planted tree seedlings into the substratum of reclaimed overburden spoil waste dumps located at the Suncor Inc. oil sands mining operation.

Financing/*Financement:* Suncor Inc.

$15 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1989 08*

## 0104-47

Tuttle, S
(403) 743-6442

Suncor Inc.

**Monitoring of reclaimed sites on the Suncor Inc. oil sands mining lease**

To monitor soil and vegetation development.

Financing/*Financement:* Suncor Inc.

## 0104-48

Veilleux, J
(418) 643-7994

Ministère l'Energie et Ressources; Direction recherche et développement

**Utilisation de biomasse, de boues d'égout et de lisiers sur les sols forestiers.**

1-Amélioration des propriétés physico-chimiques des sols pour assurer la croissance normale d'arbres plantés. 2-Augmentation du bilan humique des sols et de la teneur en éléments nutritifs. 3-Détermination des quantités optimales ou maximales qui peuvent être appliquées. 4-Vérification des effets résiduels et des toxicités possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$220 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1990 04*

## 0104-49

Veuilleux, J
(418) 651-8173

Ministère l'Energie et Ressources; Direction recherche et développement

**Recherche sur l'emploi de biomasse forestière et de lisiers en pépinières.**

Etudie les effets de l'utilisation en pépinière de biomasse forestière et de lisiers sur les propriétés physico-chimiques et biologiques des sols. Mesure les effets sur la productivité et la production de plants et semis en pépinière. Détermine les quantités optimales à appliquer. Vérifie-les effets résiduels et toxiques possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$115 000

**START/*DÉBUT*:** *1981* **END/FIN:** *1983*

## 0104-50

Visser, S
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Impact of sulphur dust & lime on forest soil chemical parameters, plant productivity & revegetation**

1. To determine the effects of S0 and lime applied at 3 rates on the plant community and soil chemical/biological parameters of a lodgepole pine forest. 2. To attempt restoration of the understory in a pine forest severly acidified by S0 dust

by liming and planting acid/salt-tolerant plants. No report available.

Financing/*Financement:* Canadian Petroleum Association

**START/*DÉBUT*:** *1987 04*

## 0104-51

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Nitrogen status, fixation and cycling on barren and revegetated Sudbury soils**

To determine the nitrogen status of barren and revegetated barren land; to determine to what extent soil nitrogen status is limiting vegetation development on revegetated land; to determine to what extent nitrogen fixation is occurring on barren and revegetated land; to determine the best means of enhancing nitrogen fixation, both symbiotic and non-symbiotic, on revegetated land. Interim report available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$50 000

**START/*DÉBUT*:** *1986 06*

## 0104-52

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Long-term monitoring of vegetation & soil development on barren & revegetated sites in Sudbury area**

To trace changes over a period of years in the chemical & physical characteristics of acid, metal-contaminated soils in Sudbury, especially following revegetation; document the colonization by plants of untreated barren soils: 1) changes in importance of seeded species; 2) the identity of colonizing species; 3) changes in importance of colonizing species; the changes occurring in the animal & microbial life occurring on & in revegetated soils. Reports available.

Financing/*Financement:* Laurentian University Research Fund

$1 000

**START/*DÉBUT*:** *1978 05*

## 0104-53

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Metal toxicity, plant metal tolerance and soil detoxification on the Sudbury Industrial Barrens**

To determine the exact nature and mechanism of operation of the toxic principle in Sudbury's acid, metal-contaminanted soils; to determine which plant species are able to grow on toxic soils, and to understand their tolerance mechanism; to fully understand the mechanism by which dolomitic limestone detoxifies the Sudbury barren soils, and to determine what other detoxicants might be used. Reports are available.

Financing/*Financement:* Laurentian University Research Fund

$1 000

**START/*DÉBUT*:** *1978 05*

## 0104-54

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**The effects of land reclamation procedures on groundwater and streamwater chemistry**

To determine whether the application of dolomitic limestone, as used in the Sudbury Land Reclamation Programme, has a beneficial effect on pH and toxic metal content of groundwater and stream water within the watershed, thereby reducing the necessity of liming acid lakes fed by such watersheds. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$16 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1988 10*

## 0104-55

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Company

**Monitoring of reclamation of pipeline construction on agricultural lands in Western Canada**

To determine the effectiveness of pipeline reclamation measures to restore agricultural capability of lands in Western Canada. Reports are available for viewing at National Energy Board, Ottawa.

Financing/*Financement:* Interprovincial Pipe Line Company

$170 000

**START/*DÉBUT*:** *1985 06* **END/*FIN*:** *1988 12*

## 0104-56

Wishart, D
(403) 420-5210

Interprovincial Pipe Line (NW) Ltd.

**Revegetation monitoring of the Norman Wells Pipeline**

To determine the effects of application of seed and fertilizer on a subarctic pipeline right-of-way in producing vegetative cover, the composition of this cover and longevity of cover. Interim and final reports available for viewing at Boreal Institute for Northern Studies and Arctic Institute North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$550 000

**START/*DÉBUT*:** *1984 02*

## 0104-57

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Company

**Geotechnical monitoring of the Norman Wells pipeline**

To determine the effect of pipeline construction and operation on terrain conditions. Progress reports are available for viewing at the National Energy Board, Ottawa.

Financing/*Financement:* Interprovincial Pipe Line Company

$2 000 000

**START/*DÉBUT***: *1984 01*

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## 0104-58

Zaloum, R
(514) 283-4252

Centre Saint-Laurent; Environnement Canada

**Ensemencement des haldes minières à l'aide de boues d'épuration**

Le but du projet est de déterminer les conditions de revégétation des haldes de résidues miniers d'amiante à l'aide des boues d'épuration de l'usine de la haute-Bécancour.

Financing/*Financement:* Ministère d'Approvisionnements et Services Canada

Energy Mines & Resources Canada

Environnement Canada, Conservation et Protection

Energie, Mines et Ressources Québec

$227 000

**START/*DÉBUT***: *1987 08* ***END/FIN***: *1989 03*

# 02

## AIR

*AIR*

## 0200-1

Bond, J
Linauskas, S
(613) 584-3311

Atomic Energy of Canada Ltd.; Research Company

**Utilization of Established Air Pollution Monitoring Networks in Ontario Following Nuclear Incidents**

To evaluate the collection efficiency for organic and elemental iodine species of various grades of activated carbon impregnated glass-fibre filter media, thereby determining its usefulness for airborne radioiodine environmental monitoring.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$33 000

**START/*DÉBUT***: *1987 02* ***END/FIN***: *1988 02*

## 0200-2

Bunce, N
(519) 824-4120

University of Guelph; Department of Chemistry

**Modelling the Photochemical Decomposition of Chlorinated Phenols by Sunlight**

1. To model the rate of decomposition of chlorophenols in the troposphere as assisted by sunlight. 2. To identify the products of the above photochemical degradation. 3. To establish the mechanisms by which these reactions take place.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$21 200

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 08*

## 0200-3

Burn, C
(519) 679-2111

University of Western Ontario

**Investigations of permafrost and ground ice conditions, Northwest Canada**

To gain understanding of permafrost growth and decay; and behaviour of water in freezing soil.

Financing/*Financement:* Geological Survey of Canada

Imperial Oil Company

Natural Sciences & Engineering Research Council

## 0200-4

Burns, S
(416) 231-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Evaluation of Modified Hi-Vols for PAH Analysis**

1. Method Validation 2. Implementation for Routine Operations 3. Provision of Accurate QC/QA Information.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$48 000

**START/*DÉBUT***: *1986 06*

## 0200-5

Burns, S
(416) 235-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Measurement of Deposition of Organic Compounds due to Long Range Transport of Pollutants**

1. Method Validation 2. Implementation for Routine Operations 3. Provision of QC/QA data 4. Paper/Report Presentation.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$165 000

**START/*DÉBUT***: *1986 07*

## 0200-6

French, J
(416) 667-7700

Institute for Aerospace Studies; University of Toronto

**Screening Methods Air and Water: Inductively Coupled Plasma Mass Spectrometry for Elemental Analysis**

1. To develop ICP/MS methods for multielement analyses of solid and liquid environmental materials. 2. To develop ICP/MS as detector for liquid and gas chromatography columns to determine the chemical form of metals. 3. To extend above to include isotopic ratio studies. 4. To verify the developed methods.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$135 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1988 06*

## 0200-7

Hipfner, J
Moody, R
(416) 235-5856

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Development of New Low Volume Sampling System using Teflon Filters for Trace Metals Analysis**

Current revisions to regulation 308 will require the Ministry to be able to analyze for a wider range of inorganic parameters on air filters. This project will develop and evaluate teflon filter media for collection of air samples to be analyzed for trace metals and TSP by X-ray, thus improving efficiency and throughput of analysis in support of air quality monitoring programs.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT***: *1987*

## 0200-8

Hirst, J
Page, J
(613) 545-6588

Queen's University; Chemistry Department

**Development of centre for environmental studies, University of Ibadan, Nigeria**

none available

Financing/*Financement:* Canadian International Development Agency

$308 309

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1990 03*

## 0200-9

Ingratta, F
unavailable

Ontario Ministry of Agriculture & Food; H.R.I.O. Complex

**Avian pest dispersal mechanisms for horticultural crops**

To prepare a set of guidelines for the management of avian disturbance procedures in the agricultural community which will result in reduced bird feeding or damage to fruit crops. Methods must be effective and in compliance with legal environmental guidelines of nearby receptors.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$14 500

**START/*DÉBUT***: *1989 09* **END/*FIN***: *1990 08*

## 0200-10

Irwin, P
(519) 823-1311

Rown, Williams, Davies & Irwin Inc.

**Scale model studies and development of prediction procedures for heavy gas dispersion in complex terrain**

To develop a practical model for predicting the dispersion of dense gases that will make appropriate allowances for the effects of surrounding buildings and topography and that incorporates a methodology for predicting peak concentrations.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$279 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1990 06*

## 0200-11

McKean, C
not available

University of Victoria

**Physical and chemical description of limnetic sediments from Langford Lake, South Vancouver Island**

To document the physical and chemical composition of the recent and holocene sediments as they relate to the influence of climate in the geology and geomorphology of the drainage basin.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$40 200

**START/*DÉBUT***: *1982 05* **END/*FIN***: *1987 12*

## 0200-12

Ogryzlo, E
(604) 228-2474

University of British Columbia

**Atmosphere and plasma etching reactions**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1985 04*

## 0200-13

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Systèmes experts pour la gestion et la protection de l'environnement.**

Mettre au point des outils utilisant la technique des systèmes experts pour aider à résoudre les problèmes reliés à la gestion et à la protection du milieu naturel comme l'aide à la décision en cas de déversements accidentels de produits toxiques, l'évaluation rapide des impacts potentiels d'un projet, etc.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Hydro-Québec

$25 000

**START/*DÉBUT***: *1986*

## 0200-14

Silverman, F
Shepard, R
(416) 979-1495

Gage Research Institute; University of Toronto

**Dose Response for Selected Environmental Air Pollution on Selected Populations**

To examine effects of ambient urban air pollution on cardiorespiratory health and exercise performance in runners.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$169 000

**START/*DÉBUT***: *1985 10* **END/*FIN***: *1989 04*

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## 0200-15

Snieckus, V
(519) 885-1211

Guelph-Waterloo Centre for Graduate Work in Chemistry; University of Waterloo

**Provision of Isomerically Pure Nitro-PAH Analytical Standards**

1. To prepare, by short and efficient routes, several classes of nitro-PAHs, potent direct acting mutagens which are increasingly detected in the environment from a variety of sources. Nitro-PAHs to be prepared are a variety of isomers. 2. Similarly, to prepare a series of hydroxylated derivative of the classes of nitro-PAHs of interest as metabolites and products of atmospheric photochemical and chemical oxidation. Some of these have already been detected in air particulate extract.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$36 900

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 03*

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## 0200-16

Trivett, N
(416) 739-4447

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Alert Research Station**

To measure and explain the trend in carbon dioxide and other radiatively active gases in the Canadian environment.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$155 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

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## 0200-17

Trivett, N
(416) 739-4447

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Flask sampling program (CO2)**

To analyse CO2 flask sampling at Alert, Cape St. James and Sable Island. To carry and inter comparison of this data with other station (Mauna Loa).

Financing/*Financement:* Environment Canada, Atmospheric Environment

$53 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0201-1

Abenhaim, L
Delfino, R
n. disponible

Université McGill; Département d'épidémiologie et de biostatistique

**Etude de faisabilité en vue d'une étude épidémiologique sur les effets des précipitations acides sur la santé.**

Déterminer l'opportunité et la possibilité de réaliser au Québec une étude épidémiologique pour évaluer les effets des précipitations acides (polluants transportés sur de longues distances) sur la santé des québécois.

Financing/*Financement:* Québec, ministère de l'Environnement

Québec, ministère de la Santé et des Services Sociaux

$24 000

**START/*DÉBUT*:** *1989* **END/*FIN*:** *1990 04*

## 0201-2

Abouguendia, Z
(306) 933-8185

Saskatchewan Research Council

**Effects of simulated acid rain on crops and forest tree species**

To evaluate the effects of simulated acid rain on several field crops and tree species under controlled growth room condition. One journal article and two technical reports are available.

Financing/*Financement:* Saskatchewan Power Corporation

Saskatchewan Environment and Public Safety

Saskatchewan Research Council

$70 000

**START/*DÉBUT*:** *1984* **END/*FIN*:** *1986 09*

## 0201-3

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**LRTAP interlaboratory quality control studies**

Define and improve the quality of data generated by laboratories that provide data to the federal/provincial LRTAP program.

Financing/*Financement:* Environment Canada, Conservation and Protection

United States Environmental Protection Agency

Lockheed Engineering & Sciences Company

$1 000 000

**START/*DÉBUT*:** *1980 04* **END/*FIN*:** *ongoing*

## 0201-4

Berrill, M
(705) 748-1455

Dept. of Biology; Trent University

**Changes in blackfly diptera: simulidae communities in central Ontario between 1937 and 1986, is acidification a possible cause**

none given

Financing/*Financement:* Ontario Ministry of Environment

$8 807

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 03*

## 0201-5

Bobba, A
(416) 336-4916

Rivers Research Branch; National Water Research Institute; Environment Canada

**Watershed models**

To develop and apply watershed acidification models for simulation of the pathway and fate of nitrate and other pollutants in the Canadian watersheds. To calibrate and verify the models with existing water and soil chemistry data. Coupling the expert system to the watershed hydrological model.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$275 000

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *1990 03*

## 0201-6

Booty, W
(416) 336-4718

Rivers Research Branch; National Water Research Institute; Environment Canada

**Aquatic ecosystem modelling**

Watershed acidification models assessment for RMCC report. Conversion of watershed acidification model to a watershed contaminants model. Develop and apply a hydrogeochemical model to predict the fate of toxic chemicals for the Athabasca River study.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$90 000

**START/*DÉBUT***: *1988 08* ***END/FIN***: *1990 02*

## 0201-7

Bottenheim, J
(416) 739-4838

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Nitrogen chemistry**

To determine the role that peroxyacetyl nitrate (PAN) in the long range transport of oxides of nitrogen. To obtain insight into seasonal variability in the inorganic and organic end products of nitrogen in the atmosphere.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$33 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0201-8

Bottenheim, J
Anlauf, K
(416) 739-4838

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Atmospheric nitrogen**

To study oxidant chemistry, nitrogen budget and the influence of H2O2 and CH2O; study seasonal changes in relative contribution of nitrogen and sulphur chemical to atmospheric acidity; to provide chemical data for Eulerian model evalution (1988-89).

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$98 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0201-9

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Method development to determine organic and inorganic compounds in environmental samples**

To develop analytical methods for semi-volatile organic compounds in ambient air and source emission samples and for multi-elemental analysis of dichotomous filter samples. Procedures will form part of in-house analytical methods manual.

Financing/*Financement:* Environment Canada, Conservation and Protection

National Incinerator Testing and Evaluation Program

$400 000

**START/*DÉBUT***: *1983* ***END/FIN***: *ongoing*

## 0201-10

Camiré, C
(418) 656-7773

Université Laval; Département des sciences forestières

**Cycle de N et de S dans des érablières saines et dépérissantes**

Connaître l'impact des dépôts atmosphériques acides (H2SO4 et HNO3) sur les sols des érablières et modéliser le devenir de ces éléments dans le cycle biogéochimique.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$30 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0201-11

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Modèle biogéochimique de la dynamique du soufre dans un écosystème boréal (Lac Laflamme, Forêt Montmorency).**

Production d'un modèle biogéochimique de la dynamique du soufre dans un écosystème recevant des précipitations acides. Quantification des principaux réservoirs de soufre dans la végétation terrestre, les sols, les sédiments et les eaux. Identification des principales formes chimiques. Mesure des flux de soufre entre les réservoirs biotiques et abiotiques. Formulation d'un modèle mathématique d'entrée-sortie du soufre dans un écosystème boréal.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$45 000

## 0201-12

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Biogéochimie de l'interface eau-sédiment**

Caractérisation et quantification du transport de substances dissoutes à l'interface eau-sédiment des lacs. Appliquer ces études au transport de substances nutritives (P, N, Si) et toxiques (métaux traces) entre les sédiments superficiels et la colonne d'eau. Préciser le rôle des invertébrés benthiques dans le transport des substances dissoutes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$35 000

## 0201-13

Cheng, L
(403) 450-5260

Alberta Research Council; Resource Technologies Dept.

**A comparison of mesoscale scale deposition models as applied to northern Alberta and Saskatchewan**

To compare and evaluate the overall performance of three mesoscale acid deposition models (MESOPUFF II, REL-

MAP and SERTAD) with respect to their capability for northern Alberta and Saskatchewan.

Financing/*Financement:* Alberta Environment
Alberta Research Council
$80 000

**START/*DÉBUT*:** *1987 11* **END/*FIN*:** *1988 11*

## 0201-14

Cho, H-R
(416) 978-6674
University of Toronto; Department of Physics

**Physical and chemical processes affecting long-range transport of air pollutants and acid rain**

To gain a better understanding of chemical, physical and dynamic processes in the earth's atmosphere affecting long-range transport of air pollutants and acid rain.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$291 600

**START/*DÉBUT*:** *1987 08* **END/*FIN*:** *1990 07*

## 0201-15

Craig, D
(306) 975-5753
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Acid neutralisation in groundwater flow systems**

To compile and disseminate information acquired during the Turkey Lakes watershed groundwater study to the scientific community, to management and to the general public.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/*FIN*:** *1989*

## 0201-16

Das, N
(403) 632-6761
Alberta Environmental Centre

**Precipitation studies**

This project supports the Acid Rain Monitoring program of the Province of Alberta and the Long Range Transport of Airborne Pollutants (LRTAP) program of the Federal Government.

Financing/*Financement:* Alberta Environment

## 0201-17

Davis, R
(604) 387-9931
British Columbia Ministry of Environment & Parks

**Photochemical dispersion modelling analysis of ozone impacts in the Lower Fraser Valley, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0201-18

Davis, R
(604) 387-9931
British Columbia Ministry of Environment & Parks

**Cloud chemistry monitoring on Seymour Mountain, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0201-19

Davis, R
(604) 387-9931
British Columbia Ministry of Environment & Parks

**Dry SO2 deposition in the Lower Fraser Valley, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0201-20

Davis, R
(604) 387-9931
British Columbia Ministry of Environment & Parks

**Meteorological assessment of acid rain in the Strait of Georgia/ Lower Mainland, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0201-21

den Hartog, G
Neumann, H
(416) 739-4860
Environment Canada; Atmospheric Environment Service; Air Quality &Inter-Environmental Research Branch

**Dry deposition - forests**

To measure atmospheric fluxes of gaseous and particulate pollutants to forests and to parametrize deposition rates to provide inputs to pollution transport and deposition model.

Financing/*Financement:* LRTAPPF -Long Range Transport of Airborne Pollutants Program Funds
Environment Canada, Atmospheric Environment
$487 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 04*

## 0201-22

Draper, W
(819) 953-1120
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evalution & demonstration of advanced coal combustion technologies**

To demonstrate new, cost effective technologies for reducing acid gas emissions.

Financing/*Financement:* Environment Canada, Conservation & Protection

$650 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *ongoing*

## 0201-23

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Petroleum fuel desulphurization**

To examine options for reducing acid gas emissions resulting from combustion of petroleum fuels.

Financing/*Financement:* Environment Canada, Conservation & Protection

$400 000

**START/*DÉBUT***: *1977* ***END/FIN***: *1988 03*

## 0201-24

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Western Canadian low-sulphur coal: its expanded use in Ontario**

To assess the costs and benefits of expanding the use of low-sulphur western Canadian coal by Ontario Hydro as a means of controlling acid gas emissions. Final summary report and technical report available.

Financing/*Financement:* Environment Canada, Conservation and Protection

British Columbia Ministry of Environment and Parks

Alberta Environment

$210 000

**START/*DÉBUT***: *1985 01* ***END/FIN***: *1986 08*

## 0201-25

El-Shaarawi, A
(416) 336-4584

Rivers Research Branch; National Water Research Institute; Environment Canada

**Statistical assessment of LRTAP data**

To continue statistical developmental works on: the estimation of the population characteristics of LRTAP lakes, and the development of a statistical regional LRTAP model.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$300 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0201-26

Fessenden, R
(403) 438-0555

Alberta Research Council

**Soil sensitivity mapping**

Prepare maps of Alberta at 1:2, 000, 000 scale depicting the distribution of soils relative to sensitivity to acid deposition and potential to neutralize acid deposition. Approximately 400 unique map units have been identified, decribed and interpreted. (Soil maps and Report available from Alberta Research Council).

Financing/*Financement:* Alberta Environment

$80 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1985 03*

## 0201-27

Finlay, P
(819) 953-1126

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Demonstration of furnace injection of sorbent at the Boundary Dam Power Plant**

To demonstrate & optimize operation of sorbent injection technology on lignite coal.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Electrical Association

Saskatchewan Power Corporation

$5 250 000

**START/*DÉBUT***: *1982* ***END/FIN***: *1988 00*

## 0201-28

Fraser, A
(416) 336-4919

Rivers Research Branch; National Water Research Institute; Environment Canada

**Aquatic/terrestrial interactions and LRTAP resources at risk**

To determine the degree of aquatic resources at risk in provinces of Canada, participating in the development of the 1989/90 LRTAP assessment report for the RMCC. To extend the range and scope of the expert systems development of the RAISON system beyond LRTAP to environmental issues in Canada.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$300 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1990 03*

## 0201-29

Fritz, P
(519) 885-1211

University of Waterloo; Department of Earth Sciences

**Sulphur and Oxygen Isotope Composition in a Watershed and their role in Acid Rain Sulphur Cycle**

To gain a better understanding of the fate and biochemical history of sulfate between fallout and run-off in a terrestrial watershed. Specifically, to assess the chemical processes affecting the isotopic composition of the soil sulphur compounds.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$32 500

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1989 04*

## 0201-30

Fryer, J
(613) 737-6504

University of Ottawa; Anatomy

**Effects of low pH on pituitary hormone secretion and on pituitary-adreno cortical function in the brook trout, salvelinus fontinalis**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$115 362

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1988 10*

## 0201-31

Gagnon, G
Roy, G
(418) 643-7994

Ministère l'Energie et Ressources; Service de recherche appliquée

**Dépérissement et mortalité dans les érablières.**

Définit le lien existant entre les critères écologiques et végétatifs et le taux de dépérissement. Précise les facteurs (stress) prédisposants et déclenchants responsables du dépérissement et de la mort de nombreux érables. Propose des solutions au problème du dépérissement. Cette étude pourra également mieux adapter les techniques d'aménagement aux divers types d'érablières et de prévenir ainsi tout dépérissement futur en diminuant les stress subis par le milieu. Rapport disponible: oui

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$144 300

## 0201-32

Gignac, L
(403) 492-5516

Botany Department; University of Alberta

**Ecological tolerances and niche structure of Sphagnum along climatic and pollution gradients**

To determine the accumulation and the effects of reduced sulphur and heavy metal deposition on several Sphagnum species. These pollutants were emitted by mining and smelting operations in the Sudbury, Ontario area and a pulp and paper mill in the Prince Rupert, B.C. area. (This report may be obtained from the CEARC).

Financing/*Financement:* Canadian Environmental Assessment Research Council

$5 000

**START/*DÉBUT***: *1985 05* ***END/FIN***: *1986 03*

## 0201-33

Harvey, H
(416) 978-3504

Department of Zoology; University of Toronto

**Chemical and Biological Impact: Physiological Stress in Fish of Episodic Acid Rain and Snow Melt**

To determine if the observed perturbations of fish populations in MOE calibrated lakes Crosson and Heney are related to the observed pH depressions in these lakes during episodic acid loading. To determine if the observed physiological stress & mortality of fish at Plastic Lake & Milford Bay occur in other waters susceptible to acidification. Resulting data used in acid loading models relating specific acid loading events to both sources of sulphide and nitrate, and effects on biota.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$40 900

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1987 04*

## 0201-34

Hastie, D
Schiff, H
(416) 736-5388

York University; Faculty of Science

**Atmospheric trace gas measurements using a tunable diode laser absorption spectrometer**

To make measurements of atmospheric trace gas concentrations to aid in the understanding of the chemistry of both ozone and acid formation. The data will be directly applicable for evaluation of Eulerian models (RADM, and ADOM). The proposed measurements will be part of the Eulerian model evaluation study jointly sponsored by MOE, AES and USEPA.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$611 500

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0201-35

Havas, M
Timmer, V
(416) 978-6409

Faculty of Forestry; University of Toronto

**The Effects of pH, Aluminum and Drought on Sugar Maple Seedlings**

To determine if aluminum, low pH, and drought act together to reduce growth of sugar maple seedlings. To determine whether nutrient status of leaves and aluminum content of leaves and stems can be used to diagnose aluminum stress.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$27 400

**START/*DÉBUT***: *1986 10* ***END/FIN***: *1987 10*

## 0201-36

Hopke, P
(315) 268-6469

Clarkson University; Dept. of Chemistry

**Development of multivariate analysis procedures for Ontario air quality data**

To complete the development of three-mode factor analysis to provide simultaneous temporal-spatial analysis of multisite air quality data. To compare the use of the Potential Source Contribution Function (PSCF) for source identification of the acidic components of collected airborne particle samples with the results previously obtained for acidic precipitation. To examine the use of unsupervised pattern recognition methods as well as several other eigenvector methods to identify the interrelationships between the particle or precipitation composition variables and their relationship to the meteorological regimes that existed when the samples were taken.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$59 200

**START/*DÉBUT***: *1989 05* **END/*FIN***: *1992 04*

## 0201-37

Knowles, P
(807) 343-8672

Lakehead University; Dept. of Biology, School of Forestry

**Genetic differences between damaged and healthy sugar maple throughout Ontario**

To determine whether healthy sugar maple stands are genetically different from damaged stands using isozyme characterization of bud tissue and multivariate statistical analyses; to determine whether healthy sugar maple trees are genetically different from adjacent damaged trees within the same stand using the same laboratory and statistical techniques. A final report will be submitted March 31, 1990.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$21 250

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0201-38

Laflamme, D
(418) 643-7994

Ministère l'Energie et Ressources; Service de recherche appliquée

**Effets des pluies acides simulées en pépinière sur la croissance de jeunes semis d'épinette noire, d'épinette blanche et d'érable à sucre.**

Détermine les effets de pluies acides simulées sur la croissance et la biomasse de semis d'épinette noire, d'épinette blanche et d'érable à sucre. Etablit les niveaux de tolérance de ces espèces à différents taux d'acidité. Evalue le statut nutritif des espèces en fonction des doses acides.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$50 000

## 0201-39

Lam, D
(416) 336-4916

Rivers Research Branch; National Water Research Institute; Environment Canada

**Regional modelling**

To develop regional simulation models with predictive capability for the assessment of acid deposition on a large spatial scale using the expert systems approach. To calibrate and verify the models with existing data from LRTAP monitoring network and other water quality studies and to provide scenario testing of management strategies and their uncertainties.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$483 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0201-40

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Boreal forest stand dynamics in central Alberta**

To study the plant community and population dynamics of 8 boreal forest ecosystems representing 3 major habitat types in which important environmental factors are also monitored. Jointly with Dr. Michael S. Ross.

Financing/*Financement:* Alberta Environment Employment Program

Environment Canada, Conservation & Protection

Alberta Environment Research Trust

Alberta Environment

$298 038

**START/*DÉBUT***: *1982 01*

## 0201-41

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Status of nitrogen in the vegetation & soil in a post-fire area of the Boreal Forest Region**

Variations in the status of nitrogen in the vegetation and soil along a post-fire successional gradient in the Boreal Forest Region; and accumulation of nitrogen and phosphorus in boreal vegetation and soils and its relationship to plant succession. Dr. James Fyles completed his doctoral thesis on this subject, working in the Hondo-Slave Lake area of central Alberta. His thesis is a public document, and several published papers have been derived from it.

Financing/*Financement:* Alberta Environment

Alberta Environment Research Trust

**START/*DÉBUT***: *1985 04*

## 0201-42

LaRoi, G
Rogers, J
(403) 492-4163
Botany Department; University of Alberta

**Competition between bearberry and lingonberry in Jack pine forests of central Alberta**

To study interactions between the two co-dominant evergreen dwarf shrubs of aligotrophic (nutrient-poor) pine forests that control their relative abundance. Does acid rain affect these interactions, M.Sc. thesis research of Mr. James Rogers (unfinished).

Financing/*Financement:* Alberta Environment Research Trust

**START/*DÉBUT***: *1985 03*

## 0201-43

Lasenby, D
(705) 748-1356
Dept. of Biology; Trent University

**Spatial patchiness of larvae of the phantom midge, chaoborus, in an acidifying lake; mechanisms and implications for monitoring**

none given

Financing/*Financement:* Ontario Ministry of Environment

$5 680

**START/*DÉBUT***: *1989 04*

## 0201-44

Lechner, L
(306) 787-6195
Saskatchewan Environment and Public Safety

**Precipitation chemistry in northern Saskatchewan**

To monitor wet deposition on an event basis at five stations in northern Saskatchewan.

Financing/*Financement:* Saskatchewan Environment and Public Safety

**START/*DÉBUT***: *1983 05* **END/*FIN***: *1988 04*

## 0201-45

Lechner, L
(306) 787-6195
Saskatchewan Environment and Public Safety

**Interim target loadings for acidic deposition in western Canada: synthesis of existing information**

To survey the scientific basis of the acidic deposition target loading concept, discuss the selection of parameters on which its application may be used, recommend an approach to determine target loadings and document the availability of data bases for these parameters. A report will be available in Jan. 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Saskatchewan Environment and Public Safety

Manitoba Dept. of Environment, Workplace Safety, and Health

Alberta Environment

British Columbia Ministry of Environment and Parks

$50 000

**START/*DÉBUT***: *1985 11* **END/*FIN***: *1988 01*

## 0201-46

Lechner, L
(306) 787-6195
Saskatchewan Environment and Public Safety

**Sensitivity of western and northern Canada surface waters to acidic inputs**

A report is available from Sask. Environment of the four western provinces, the Northwest Territories and Environment Canada. An overview of the sensitivity of the lakes in western and northern Canada to acidic deposition is presented.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$10 000

**START/*DÉBUT***: *1984 01* **END/*FIN***: *1988 01*

## 0201-47

Lechner, L
(306) 787-6195
Saskatchewan Environment and Public Safety; Air and Land Protection Branch

**Sensitivity of Saskatchewan surface waters to acidic inputs, February 1987**

An overview of the sensitivity of lakes in Saskatchewan to acidic deposition is presented in a report available from Sask. Environment and Public Safety.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$10 000

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1987 02*

## 0201-48

Lee, G
(613) 996-4570
Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Demonstration of circulating fluidized bed combustion - Chatham power plant**

To develop a combined SO2/NOx emission control technology to commercial availability.

Financing/*Financement:* Energy, Mines & Resources Canada

New Brunswick Electric Power Corporation

$41 000 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1989 00*

## 0201-49

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Low NOx burner development for power plants**

To develop & install low NOx burners on Canadian power plants

Financing/*Financement:* Energy, Mines & Resources Canada

Ontario Hydro

$5 000 000

**START/*DÉBUT***: *1979* ***END/FIN***: *1990 00*

## 0201-50

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology (EMR)

**Demonstration of furnace injection of sorbent at the Camp Gagetown heating plant**

To demonstrate a cost effective emission technology.

Financing/*Financement:* Energy, Mines & Resources Canada

$2 700 000

**START/*DÉBUT***: *1982* ***END/FIN***: *1988*

## 0201-51

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Nutrient redistribution in jack pine as an indication of acid deposition stress**

To determine the feasibility and applicability of using stepwise PIXE (Proton Induced X-ray Emission Spectroscopy) analysis to quantify nutrient redistribution in stressed and nonstressed jack pine trees in the Athabasca Oil Sands regions of Alberta.

Financing/*Financement:* Alberta Environment

$35 800

**START/*DÉBUT***: *1983 10* ***END/FIN***: *1988 03*

## 0201-52

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Alberta Government/Industry. Acid deposition research program, biophysical aspects**

1. An initial assessment of the potential impact of acid-forming gases on Alberta's environment, including local & regional air quality assessments & agricultural crops & soil evaluation; 2. An inventory of sulphur oxide & nitrogen oxide emissions in Alberta; 3. A world literature review in the biological sciences on the effects of acid deposition on vegetation, soils & surface & ground waters, and then placing these in an Alberta context.

Financing/*Financement:* Alberta Environment

Canadian Petroleum Association

Energy Resources Conservation Board

Utilities Group, Alberta

$5 309 758

**START/*DÉBUT***: *1985 02* ***END/FIN***: *1988 07*

## 0201-53

Leighton, H
(514) 398-3766

Université Mc Gill; Département de météorologie

**Cloud chemistry modelling**

Studies the roles played by different types of clouds, precipitation systems, and fog in depositing and redistributing within the atmosphere various atmospheric pollutants, with particular emphasis on those resulting from acid precipitation.

Financing/*Financement:* Canada, ministère de l'Environnnment

$20 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0201-54

Letreman, J
(403) 743-6687

Suncor Inc, O.S.G.

**Forest biomonitoring**

Annual assessments of forest health, air pollution effects, and forest protection.

Financing/*Financement:* Suncor Inc.

## 0201-55

Leung, P
(613) 991-9456

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Development of source measurement technology**

To develop new and update existing stack emissions measurement methods and evaluate commercially available monitors capable of measuring stack emissions on a real-time basis. To develop methods in support of CEPA regulations and guidelines.

Financing/*Financement:* Environment Canada, Conservation and Protection

$110 000

**START/*DÉBUT***: *1987* ***END/FIN***: *ongoing*

## 0201-56

Lortie, G
(418) 656-2898

Université Laval; Centre d'études nordiques

**Biostratigraphie et paléoécologie des lacs nordiques et alpins (Québec).**

Le projet concerne la paléoécologie et la biostratigraphie des diatomées dans les séquences post-glaciaires de lacs acides localisés le long d'un large gradient latitudinal s'étalant depuis Poste-de-la-Baleine juqu'aux hauts plateaux de la Gaspésie (Québec). L'étude des séquences lacustres a pour objectif d'établir et de comparer la biostratigraphie des diatomées depuis le post-glaciaire, de mettre en évidence l'évolution des flores en fonction des oscillations climatiques, de confirmer la valeur biogéographique des taxons et assemblages supposés circumpolaires, ainsi que les caractéristiques physico-chimiques de leurs milieux. Un volet du projet concerne les diatomées lacustres sub-actuelles du Québec. La région présentement étudiée concerne le Nouveau-Québec.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$42 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1990 05*

## 0201-57

MacTavish, D
(416) 739-4847

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**CAPMoN chemical analysis**

To measure atmospheric particle, nitric acid and sulphur dioxide from samplers of the air monitoring network.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$155 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0201-58

Magnan, P
Couture, R
(819) 376-5053

Université du Québec à Trois-Rivières; Département de chimie biologie

**Effets de l'acidité de l'eau sur la croissance de la perchaude (Perca flavescens) du Témiscamingue.**

Evaluer l'effet des précipitations acides sur la croissance de la perchaude des lacs du Témiscamingue.

Financing/*Financement:* Québec, ministère de l'Environnement

$20 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 03*

## 0201-59

McBean, E
(519) 885-1211

University of Waterloo; Department of Civil Engineering

**Detectability of Step Trends in the Rate of Atmospheric Deposition of Sulfate**

1. Develop relationships defining the trade-off between the cost of acid deposition monitoring and time/network requirements to detect step trends in deposition levels. 2. To define the relative deposition variability associated with temporal, spatial and sample collection factors.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 200

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 05*

## 0201-60

Moore, R
(514) 398-4111

Université Mc Gill; Département de géographie

**Snowpack water routing and chemistry**

The aim of this project is to study coupled water percolation and ion movement in a snowpack in a forested watershed, near St. Hippolyte, QC. Field measurements would include snow surface energy exchange, snow and soil thermal regimes, snowmelt rates, snowpack stratigraphy, percolation at one or two depths within and at the base of the snowpack and percolate chemistry model will be formulated by coupling a physically-based snowpack hydrologic model with a hydro-chemistry model. Field data such as snow thermal regime, surface energy exchange and statigraphy would serve as input data, and the model would simulate snowpack and percolate chemistry at different points in a pack; these values would be compared to observed values. The project would contribute to the knowledge required for modelling.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$43 500

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0201-61

Nicholls, K
(416) 235-5810

Ontario Ministry of Environment; Water Resources Branch

**Inferred pH/alkalinity history of acid sensitive lakes using algal remains ('fossil') preserved in lake sediments**

To determine the rate of change of alkalinity/pH in selected lakes over the past 100 years.

Financing/*Financement:* Ontario Ministry of Environment

$90 000

## 0201-62

Niki, H
(416) 736-2100

York University

**Atmospheric measurements of natural hydrocarbons using gas chromatography/mass spectrometry**

To measure, using gas chromatography/mass spectrometry, a number of key volatile organic species, particularly biogenic hydrocarbons in the oxidant/acid rain problem to be compared against model predictions and also to gain a better understanding of atmospheric chemistry in a Canadian setting, as part of the Eulerian Model Evaluation Study. Output: Progress Report May 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$256 400
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0201-63

Nriagu, J
(416) 336-4784

Lakes Research Branch; National Water Research Institute; Environment Canada

**Trace metals in the lower Great Lakes: atmospheric influence**

To evaluate the role of atmospheric inputs and the influence of nutrient elements on the baseline concentrations of trace metals in waters of the lower Great Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0201-64

Olson, M
(416) 739-4870

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Lagrangian model**

To use the Lagrangian model to compute trajectories, and sulphur dioxide and sulphate concentrations. Also used to investigate transboundary sulphur fluxes between USA and Canada as well as budgets and source-receptor relationships.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$145 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0201-65

Parker, G
(705) 675-1151

Laurentian University; Biology

**Effects of soil acidification and local smelter emissions on the cadmium content of soils, forage and fecal pellets in deer yards of the Sudbury - Manitoulin area**

To determine cadmium levels & pH of the surficial soils in deer yards designated as either geophysically sensitive (non-buffered), metal contaminated and geochemically sensitive (non-buffered, contaminated) or tolerant (buffered) to acid precipitation. To relate cadmium burdens in surficial soils to levels present in major forage species of deer. To identify browse species serving as potential indicators of prevailing cadmium enrichment conditions. To examine the potential of deer fecal pellets as bioindicators of the availability, exposure-level and/or body burden of cadmium. (Report available as of March 30, 1989).

Financing/*Financement:* Ontario Renewable Resources Research Grant

Wildlife Toxicology Fund

Ontario Ministry of Natural Resources

$26 390
**START/*DÉBUT***: *1986 03* ***END/FIN***: *1989 03*

## 0201-66

Peake, E
(403) 220-3194

Kananaskis Centre for Environmental Research; University of Calgary

**Wet and dry deposition in Alberta**

To measure wet and dry deposition in Alberta based on measurements of air quality and deposition velocity of SO2 as well as rainfall.

Financing/*Financement:* Acid Deposition Research Program (Alberta)

$500 000

**START/*DÉBUT***: *1985 12*

## 0201-67

Perry, S
(613) 564-4272

University of Ottawa; Biology

**Metabolic consequences of environmental acidification in fish**

none given

Financing/*Financement:* Ontario Ministry of Natural Resources

World Wildlife Fund

$101 200

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 12*

## 0201-68

Pinault, P
(819) 953-1121

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Modifications to CANSIM computer model for Canadian power utilities**

Maintain up to date capability to analyze emission control options available to Canadian power utilities & their costs.

Financing/*Financement:* Environment Canada, Conservation & Protection

$300 000

**START/*DÉBUT***: *1982* ***END/FIN***: *1992 00*

## 0201-69

Planas, D
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Interactions des différents niveaux trophiques des systèmes lotiques en milieu naturel et perturbé par acidification.**

Le but de cette recherche est d'étudier les effets indirects des précipitations acides découlant de la modification de l'organisation du réseau trophique. Les objectifs sont d'étudier d'une part, comment l'augmentation de la biomasse et

de la production périphytique des milieux lotiques acidifiés entraîne la modification de la communauté benthique. D'autre part, les ressources benthiques potentiellement disponibles dans ce milieu pertubé sont utilisables par les poissons.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Canadian National Sportmen's Fund

$88 400

**START/*DÉBUT***: *1983* **END/*FIN***: *1987*

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## 0201-70

Powles, P
(705) 748-1316

Dept. of Biology; Trent University

**Trophic interactions of perch and zooplankton in an acid lake**

none given

Financing/*Financement:* Ontario Ministry of Natural Resources

$9 750

**START/*DÉBUT***: *1988 05*

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## 0201-71

Protz, R
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Development of an index of soil quality**

To develop an 'index of soil quality' based on differences between virgin and cultivated soil properties.

Financing/*Financement:* Ontario Ministry of Agriculture and Food

Natural Sciences and Engineering Research Council

**START/*DÉBUT***: *1987 02*

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## 0201-72

Puckett, K
(416) 739-4836

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Eulerian model development**

Inter agency project to develop an acidic deposition and oxidant model (ADOM) using Eulerian approach. Final version of the model to be developed in 87-88 and field evaluation will take place in 88-89.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1983* **END/*FIN***: *1991*

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## 0201-73

Reid, N
(416) 965-1634

Ontario Ministry of Environment; Air Resources Branch

**Eulerian model evaluation field study**

To collect special atmospheric chemistry measurements on acid-rain-related compounds, for evaluation of Eulerian long-range transport studies.

Financing/*Financement:* Ontario Ministry of Environment

$220 000

**START/*DÉBUT***: *1988 06* **END/*FIN***: *1991 05*

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## 0201-74

Roberts, T
(403) 329-5322

Alberta Environment

**Seasonal fluctuations in soil pH**

Documented the relative importance of seasonal variations in soil chemical properties as an aid to identifying long term acidification. A statistical model was developed that considers the implications of spatial and temporal variation for the process of monitoring for soil acidification. (Report available from Earth Sciences Division, Alberta Environment).

Financing/*Financement:* Alberta Environment

$276 700

**START/*DÉBUT***: *1983* **END/*FIN***: *1987 03*

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## 0201-75

Roberts, T
(403) 329-5322

Alberta Environment

**Long-term measurement of the acidification of non-cultivated soils in Alberta**

Eight monitoring sites have been established to measure the acidification of soils over a long period of time in areas where deposition of industrial acid precursors is expected. They are intended to measure the worst situations, hence they will act as soil acidification early warning sites.

Financing/*Financement:* Alberta Environment

$3 400 000

**START/*DÉBUT***: *1981*

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## 0201-76

Rybak, M
(416) 624-2964

Aquatic Research & Ecological Consultants

**Fossil Chrysophycean Cyst Assemblages as Paleoindicators in Acidified Laks**

Establishment of new predictive techniques for reconstruction of long-term changes of pH and related chemistry in the lakes in the Province of Ontario. Describe chrysophycean fossil cyst assemblages from 52 lakes in Ontario. Examination of the relationship between chrysophycean cyst assemblages & lake water pH. Development of transfer functions. Determine the concentration of major oxides & trace elements in sediments. Development of a new technique to predict water chemistry characteristics.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 500

**START/*DÉBUT***: *1987 02* **END/*FIN***: *1988 02*

## 0201-77

Schemenauer, R
Anlauf, K
(416) 739-4606

Environment Canada; Atmospheric Environment Service

**Chemistry of high elevation fog (CHEF)**

To study the chemical composition of fog in high elevation area. To compare the pH of fog water to pH of precipitation in surrounding areas. Compare ozone concentration in mountain top and surrounding valleys.

Financing/*Financement:* Environment Canada, Atmospheric Environment

Long Range Transport of Airborne Pollutants Program Funds

$285 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0201-78

Schmit, J-P
(514) 282-3048

Université du Québec à Montréal; Département de chimie

**Etude exploratoire en vue d'évaluer la bioaccumulation de toxiques induits ou aéroportés chez les poissons en fonction de l'acidité des lacs de la région sud de la Mauricie.**

Etablir le bilan inorganique élémentaire complet des lacs de la région sud de la Mauricie et, à partir d'un choix de trois espèces sportives de poisson, établir le taux de bioaccumulation des principaux inorganiques toxiques et/ou bénéfiques dans la chair de poisson. Rechercher une corrélation entre l'acidité des lacs et la bioaccumulation dans la chair de poisson.

Financing/*Financement:* Québec, ministère de l'Environnement

$36 550

**START/*DÉBUT***: *1988 06* ***END/FIN***: *1989 06*

## 0201-79

Semkin, R
(416) 336-4781

Rivers Research Branch; National Water Research Institute; Environment Canada

**Hydrogeochemical response of Turkey Lakes to LRTAP**

Quantify the hydrogeochemical response of the Turkey Lakes watershed to acidic deposition using a mass balance approach. Provide results from the TLW studies to support the RMCC/LRTAP Assessment Report.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$1 500 000

**START/*DÉBUT***: *1980 04* ***END/FIN***: *1990 03*

## 0201-80

Shewchuk, S
(306) 933-5437

Saskatchewan Research Council

**Atmospheric sciences contract research**

Research in the areas of air pollution, acid rain, climatology, organic vapours in the atmosphere; to evaluate the effects of man on the atmospheric environment.

Financing/*Financement:* Environment Canada, Atmospheric Environment

Saskatchewan Environment and Public Safety

Private sector

$550 000

## 0201-81

Smol, J
(613) 545-6147

Biology; Queen's University

**Paleolimnological investigations of lake deterioration and recovery in Sudbury area lakes**

unavailable

Financing/*Financement:* Natural Sciences & Engineering Research Council

$160 000

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1989 10*

## 0201-82

Smol, J
Kingston, J
(613) 545-6147

Queen's University; Biology Department

**Paleoecological assessment of changes in Adirondack Lake ph and alkalinity, pre-1950 to present**

none present

Financing/*Financement:* Indiana University

$197 234

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1989 09*

## 0201-83

Smol, J
Kingston, J
(613) 545-6147

Queen's University; Biology Department

**Paleoecological assessment of changes in Adirondack Lake ph and alkalinity: recent (since 1970) and historical (since 1850) trends**

none available

Financing/*Financement:* United States Environmental Protection Agency

$98 671

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1990 09*

## 0201-84

Stein, J
(418) 656-2945
Université Laval; Centre de recherche en biologie forestière

**Simulation du transport des polluants atmosphériques dans les écosystèmes forestiers et aquatiques.**

Ce programme de recherche représente un élément important du programme d'évaluation de l'impact des précipitations acides sur les écosystèmes aquatiques et forestiers où l'on veut définir des seuils de dépôts atmosphériques acceptables et vérifier ces seuils cibles au moyen de modèles prédictifs d'impact. L'objectif du programme consiste à développer un simulateur mathémathique des processus chimiques et hydrologiques à l'échelle d'un bassin versant et de le vérifier à l'aide de données prises sur le terrain. L'hiver et le printemps sont les périodes choisies pour simuler le cheminement des composantes chimiques dans l'écosystème forestier. L'étude est effectuée sur le bassin du lac Laflamme à la station expérimentale de la forêt Montmorency de l'Université Laval.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec: FCAR, Canada: CRSNG

Fonds institutionnel de recherche

$566 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 08*

## 0201-85

Stern, B
(613) 957-1877
Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2808)**

To assess the direct health effects of air-borne pollutants.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$2 003 118

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0201-86

Stern, B
(613) 957-1877
Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2809)**

To assess the indirect effects of LRTAP (acid deposition).

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$249 517

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0201-87

Stern, B
(613) 957-1877
Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2810)**

To provide support and technical assistance in efforts directed at controlling acidic deposition.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$13 133

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0201-88

Stern, B
(613) 957-1877
Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2811)**

To develop more sensitive parameters for assessing human exposure to pollutants associated with long range transport.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$204 688

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0201-89

Stokes, P
France, R
(416) 978-4545
Institute for Environmental Studies; University of Toronto

**Influence of lake pH and macrograzers on nuisance metaphytic algal growth**

To determine factors (primary and secondary) related to the increased growth of attached and metaphytic zygnematacean algae in softwater lakes.

Financing/*Financement:* Ontario Ministry of Environment

$28 000

## 0201-90

Strosher, M
(403) 220-6137
Kananaskis Centre for Environmental Research; University of Calgary

**Sulphur gases and organic hydrocarbons relative to industrial development**

To assess the input of reduced sulphur gases and organic hydrocarbons from gas processing facilities as well as other industrial development in relation to background levels as determined at a remote mountain location in Alberta. The findings of this project are contained in an overall report on biophysical aspects of acid deposition in Alberta submitted to the Acid Deposition Research Program (ADRP).

Financing/*Financement:* Canadian Petroleum Association

Alberta Environment

$200 000

**START/*DÉBUT***: *1985 06* **END/*FIN***: *1988 06*

## 0201-91

Summers, P
(416) 739-4468

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**LRTAP data analysis**

To synthsize and interpret LRTAP air quality monitoring data in order to provide relevant and timely information input to 1) the LRTAP 1990 assessment, 2) ECE and other international activities, and 3) departmental policy on various atmospheric chemistry issues.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$141 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0201-92

Tashiro, C
(416) 235-5897

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Investigation of Chlorinated Dibenzo-p-dioxins and Dibenzofurans in Atmospheric Deposition**

A. To determine the presence or absence of dioxins/furans in toxic precipitation samples by collecting precipitation over an extended period and at various locations. B. To determine if there are losses of dioxins/furans to the glass bottle walls during extended storage periods.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT***: *1986 11*

## 0201-93

Thomas, R
(416) 336-4998

Rivers Research Branch; National Water Research Institute; Environment Canada

**LRTAP Monitoring Coordination**

To coordinate assemblage, editing and evaluation of aquatic monitoring data and commence integrated report preparation.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$35 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 04*

## 0201-94

Tollefson, E
(403) 220-5754

Department of Chemical & Petroleum Engineering; University of Calgary

**Oxidation of low concentrations of hydrogen sulfide in natural gas over activated carbon catalysts**

The objective was to remove hydrogen sulfide in low concentrations from natural gas by oxidation with air using an activated carbon catalyst. The hydrogen sulfide is converted to sulfur and water which can readily be collected, the sulfur being a saleable product.

Financing/*Financement:* Canadian Gas Processor's Association

Natural Sciences and Engineering Research Council

$35 000

**START/*DÉBUT***: *1983 06*

## 0201-95

Tollefson, E
Hall, E
(403) 220-5754

University of Calgary; Dept. of Chemical & Petroleum Engineering

**Process for desulfurization of coke produced in recovering synthetic crude oil from bitumen**

To develop a process for the removal of sulphur from coke produced by Syncrude Canada Ltd. and Suncor Inc. Removal of a major portion of the sulphur present in the coke would make it feasible to burn the coke as a relatively clean fuel. Reports are available through Alberta Oil Sands Technology and Research Authority in Edmonton.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT***: *1975 04*

## 0201-96

Turchenek, L
Abboud, S
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Assessment of present and future effects of acidic and acid forming substances on Alberta soils**

To predict if and when adverse effects will occur in Alberta soils due to atmospheric deposition of acidic and acidifying substances.

Financing/*Financement:* Acid Deposition Research Program (Alberta)

Alberta Research Council

$187 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1990 03*

## 0201-97

Turchenek, L
Abboud, S
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Buffering capacity of soils**

To develop a database of soil properties - acid buffering capacity, aluminum solubility, and general soil characteristics related to acidity and ion exchange properties - needed to

evaluate acidification and associated processes resulting from acidic deposition.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$46 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0201-98

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Evaluation du besoin d'une politique de restauration des lacs acides par la pratique du chaulage (avant-projet).**

non disponible

Financing/*Financement:* Québec, ministère du Loisir, de la Chasse et de la Pêche

$17 400

**START/*DÉBUT*:** *1987 06* **END/*FIN*:** *1988 04*

## 0201-99

Vet, R
(416) 739-4853

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**National atmospheric chemistry database (NatChem)**

Establish a permanent archive with multi-network summary reports for Canadian atmospheric deposition data.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$95 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 04*

## 0201-100

Vet, R
McNair, S
(416) 739-4853

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**CAPMoN (Canadian Air and Precipitation Monitoring Network)**

To maintain air and precipitation monitoring stations and subject the data to stringent quality assurance.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$759 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *ongoing*

## 0201-101

Villeneuve, J
(418) 654-2532

Université du Québec; INRS-eau

**Méthodologie d'évaluation des tendances spatio-temporelles des phénomènes reliés aux précipitations acides.**

Etablir une démarche opérationnelle qui permette d'identifier les tendances et d'estimer la distribution spatio-temporelle des phénomènes reliés aux précipitations acides, ceci à partir de données décrivant ces phénomènes (notamment les concentrations d'ions, les dépôts massiques d'ions et les hauteurs de précipitation). Le projet visera à optimiser, à l'aide d'outils mathématiques à la fois flexibles, la procédure d'estimation en fonction des données disponible tout en insistant sur la qualité et la pertinence des représentations graphiques des résultats.

Financing/*Financement:* Québec, ministère de l'Environnement

$57 591

**START/*DÉBUT*:** *1988 06* **END/*FIN*:** *1990 03*

## 0201-102

Villeneuve, J
(418) 654-2532

Université du Québec; INRS-eau

**Interprétation et représentation de la distribution spatiale et temporelle des dépôts acidifiants en utilisant la géostatistique.**

Interprétation et représentation de la distribution spatio-temporelle des dépôts acidifiants en utilisant la géostatistique. Permettre de prédire l'apport ou la perte de précision que causerait l'ajout, l'élimination ou le déplacement d'un ou plusieurs sites d'échantillonnage.

Financing/*Financement:* Québec, ministère de l'Environnement

$53 750

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 08*

## 0201-103

Voldner, E
(416) 739-4670

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Atmospheric loading**

To investigate the pathway of selected toxic chemicals, and to estimate concentrations in air and precipitation and net atmospheric input of these chemicals for regions in North America.

Financing/*Financement:* Great Lakes Water Quality

Long Range Transport of Airborne Pollutants Program Funds

$150 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 04*

## 0201-104

Wojtiw, L
(403) 450-5280

Alberta Research Council

**The role and importance of particulate emissions in the precipitation chemistry of western and northern Canada**

The purpose of the study is to consider the role of atmospheric dust in the chemistry of precipitation. Report available: Saskatchewan Research Council F-906-24-B-88, Oct. 1988.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

## 0201-105

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**An investigation of cadmium concentrations in wildlife of Manitoba**

To evaluate cadmium levels in kidney and liver of moose, elk, deer, wolf, bear and coyote in Manitoba.

Financing/*Financement:* Wildlife Toxicology Fund

Manitoba Dept. of Environment and Workplace Safety and Health

$48 700

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 03*

## 0201-106

Yung, Y-K
Stokes, P
(416) 978-7141

Institute for Environmental Studies; University of Toronto

**Taxonomy and general biology of zygnemataceae (chlorophyta) in Ontario lakes**

To investigate the taxonomy and biology of the filamentous green algae proliferating in the littoral areas of many Ontario lakes in recent years.

Financing/*Financement:* Ontario Ministry of Environment

$35 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1989 01*

## 0202-1

Abouguendia, Z
(306) 933-5400

Saskatchewan Research Council

**Evaluation of the sensitivity of Sask. forest vegetation and field crops to acidic precipitation**

A bench scale study was established to determine the level of acidity at which damage would occur. A report is available from Sask. Environment and Public Safety and the Sask. Research Council.

Financing/*Financement:* Saskatchewan Environment and Public Safety

Saskatchewan Power Corporation

$40 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 03*

## 0202-2

Heeley, W
unavailable

HRAI Technical Services Division

**Survey of community acceptance of air conditioner noise**

Identify the acceptability of sound level of a neighbour's air conditioner or heat pump in an environment when every household has an air conditioner. Identify the community response of the above, when only some residences have air conditioners.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$10 000

**START/*DÉBUT***: *1989 07* ***END/FIN***: *1990 06*

## 0202-3

Inculet, I
(519) 661-2002

University of Western Ontario; Faculty of Engineering Science; Dept. of Electrical Engineering

**Development of standards for safe gas composition limits and of a system to shorten the de-energization (outage) of electrostatic precipitators in cement plants during explosive conditions**

Development of standards for safe gas composition limits and of a system to eliminate or shorten the de-energization (outage) of electostatic precipitators in cement plants during explosive conditions.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$61 500

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 03*

## 0202-4

Johnston, R
(403) 237-1234

BP Canada Inc.

**Field surveys and monitoring of bald eagles in the vicinity of Hope Brook Mine, Newfoundland**

To determine and monitor population size and parameters, distribution, breeding success and other ecological parameters of bald eagles in the vicinity of the Hope Brook Mine, Newfoundland ie. Cinq Cerf Bay, Couteau Bay, Connoire Bay. Period of study 1986-1989. Interim reports available from BP Canada Inc., Calgary (see above).

Financing/*Financement:* Hope Brook Gold Inc.

$20 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 07*

## 0202-5

Johnston, R
(403) 237-1234

BP Canada Inc.

**LaPoile caribou herd study, Newfoundland**

1. To determine and monitor herd's population size and parameters, rates and causes of mortality, seasonal distribution and habitat (year round) within herd's total range, and numbers, distribution and habitat use in vicinity of Hope Brook Mine. 2. To assess what effects development of the Hope Brook Mine has on the herd re:above parameters. Annual reports available commencing in 2nd half, 1988, for four years.

Financing/*Financement:* Hope Brook Gold Inc.

Newfoundland and Labrador Wildlife Division

$800 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1991 04*

## 0202-6

Kelsall, T
Ogilvie, D
(416) 962-6350

Hatch Associates, Consulting Engineers Ltd.

**Sound Levels at a Distance From Industrial Plants**

1. To validate the prediction methodology used in C.S.A. standard Z107.55; 2. Encourage the prediction's use and help standarize the format of noise impact assessments by computerizing it, allowing wide distribution.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$28 500

**START/*DÉBUT***: *1987 02*

# INDOOR AIR QUALITY

# *QUALITÉ DE L'AIR INTÉRIEUR*

## 0203-1

Bickis, U
(613) 545-2909
Occupational Health & Safety; Queen's University

**Indoor air quality**

unavailable

Financing/*Financement:* Labour Canada

$25 000

**START/*DÉBUT***: *1987* **END/FIN**: *1988 00*

## 0203-2

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**Study of respiratory health in swine producers and indoor air quality in animal confinement building**

Effect of animal confinement building indoor air quality on pig farmers

Financing/*Financement:* Health and Welfare Canada

$282 567

**START/*DÉBUT***: *1988 10* **END/FIN**: *1991 06*

## 0203-3

Fazio, P
Haghighat, F
(514) 848-3210
Université Concordia; Centre for Building Studies

**Indoor emissions from combustion appliances: development of a predictive model.**

The major objectives of this research are to determine the emission rates of combustion products from gas appliances under various operation conditions and how the level of contaminants vary with ventilation stategies; to develop mathematical model, and to carry out on-site measurements and evaluation of several gas appliances; to validate the computer model, and to carry out optimization studies.

Financing/*Financement:* Gaz métropolitain

Fonds pour la formation des chercheurs et l'aide à la recherche

$180 000

**START/*DÉBUT***: *1987 03* **END/FIN**: *1989 03*

## 0203-4

Feddes, J
(403) 492-4251
University of Alberta; Agricultural Engineering

**A study of air quality in commercial turkey rearing facilities**

To quantify rates of production of aerial contaminants (NH3, CO2, dust, water vapour) within commercial rearing facilities in Alberta during a bird cycle. Final report will be available.

Financing/*Financement:* Alberta Research Council

$32 000

**START/*DÉBUT***: *1987 12* **END/FIN**: *1988 06*

## 0203-5

Fernbach, E
Guerriere, R
(416) 979-5042
Office of Research and Innovation; Ryerson Polytechnical Institute

**Effect of woodstove catalyst on the nature of PAH content of indoor pollution and stack emissions**

To determine the extent and nature of smoke spillage into indoor air resulting from the normal and sub-normal operation of a woodstove equipped with a catalyst.

Financing/*Financement:* Energy Mines & Resources Canada

$54 473

**START/*DÉBUT***: *1985 11* **END/FIN**: *1988 10*

## 0203-6

Hallman, E
(705) 675-1151
Laurentian University; Physics/Astronomy

**The lifetimes and pathways of the diesel particulate and the PAHs in dieselized underground mines**

To examine the relationship between diesel particulates and the polycyclic aromatic hydrocarbon content of diesel exhaust in an underground mine environment. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

Falconbridge Nickel Mine Ltd.

$107 400

**START/*DÉBUT***: *1986 01* **END/FIN**: *1987 07*

## 0203-7

Messing, K
Mergler, D
(514) 282-3334
Université du Québec à Montréal; Département des sciences biologiques

**Approche biologique à l'environnement de travail.**

Dépister les effets précoces des agents ou conditions dans le milieu de travail sur des indicateurs biologiques. Spécifiquement, étudier les effets génétiques de faibles doses de radiations ionisantes, effets neurotoxiques des solvants, effets physiologiques de la chaleur, du froid.

Financing/*Financement:* Institut de recherche en santé et sécurité du travail

$555 000

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## 0203-8

Smoragiewicz, W
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Présence possible des mycotoxines secrétées par les microorganismes retrouvés dans les systèmes de ventilation.**

L'évolution des systèmes de ventilation a été accompagnée d'une série très variée de troubles de santé. Parmi les nombreux facteurs qui peuvent en être responsables, on retrouve les microorganismes entraînés par les courants d'air après une incubation dans les endroits différents des systèmes. Nous proposons une recherche sur la possible production de mycotoxines par des champignons se trouvant dans les systèmes de ventilation.

Financing/*Financement:* Confédération des syndicats nationaux

$13 750

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 09*

## 0204-1

Barlow, F
(403) 450-5253

Alberta Research Council

**Calculation of summer aerosol profiles over central Alberta**

The primary objective of the project is to determine the average summer profiles of atmospheric aerosol number-size distribution, recorded over central Alberta using aircraft measurements.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$11 000

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1989 06*

## 0204-2

Barlow, F
Cheng, L
(403) 450-5253

Alberta Research Council

**The effect of urban air quality on visibility: Phase I comprehensive research & monitoring protocol**

The first phase of a two-phase research program designed to study the effect of urban air quality on visibility of the Calgary region. Phase I included instrumentation development, field testing, data analysis and experimental design. Report submitted to Alberta Environment.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$59 870

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1987 03*

## 0204-3

Barlow, F
Mason, J
(403) 450-5253

Alberta Research Council

**Monitoring arctic haze using radiometric techniques**

The objectives of the project were to test and analyse radiometric techniques of measuring total atmospheric aerosol loading as expressed by the aerosol depth. Report submitted to NWT and available.

Financing/*Financement:* Renewable Resources, Government of the Northwest Territories

Alberta Research Council

$15 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1987 08*

## 0204-4

Barrie, L
(416) 739-4868

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Arctic air chemistry**

To develop understanding of Arctic air pollution by sustaining routine aerosol chemistry observation at Alert and analysing the data.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$93 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-5

Barrie, L
(416) 739-4868

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Aerosol chemistry**

To investigate the chemical compounds that dominate the mass of resperable light scattering aerosol. To investigate usefulness of lead isotope ratios as indicator of lead origin.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$15 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-6

Barrington, S
(514) 398-7776

Collège MacDonald: Département de génie rural

**L'atténuation d'odeurs en provenance d'entrepôts à lisiers de porcs.**

Mesurer l'efficacité de l'usage de la tourbe de sphaigne pour atténuer les odeurs provenant d'entrepôts à lisier de porcs.

Financing/*Financement:* Sources diverses

Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Canada, ministère de l'Agriculture

$30 000

## 0204-7

Beerli, M
(819) 562-7979

Coratel Ltée

**Essais pilotes de réduction des rejets d'azote ammoniacal pour prévenir les surcharges azotées dans les eaux souterraines.**

Vérifier par des essais pilotes le bien fondé des conclusions et recommandations de l'étude de préfaisabilité technico-économique de récupération des rejets d'azote ammoniacal émis à l'atmosphère par le procédé aérobie de traitement du lisier de porc de l'usine de Saint-Elzéar.

Financing/*Financement:* Québec, ministère de l'Environnement

$63 800

**START/*DÉBUT***: *1988 07* **END/FIN**: *1989 03*

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## 0204-8

Beerli, M
(819) 562-7979

Coratel Ltée

**Réduction des rejets d'azote ammoniacal pour prévenir les surcharges azotées dans les eaux souterraines.**

Réaliser une étude de préfaisabilité technico-économique de récupération des rejets à l'atmosphère d'azote ammoniacal libéré par le procédé de traitement du lisier de porc à l'usine de Saint-Elzéar.

Financing/*Financement:* Québec, ministère de l'Environnement

$26 310

**START/*DÉBUT***: *1988 02* **END/FIN**: *1988 06*

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## 0204-9

Bisaillon, J
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Développement d'un procédé anaérobie de désodorisation du lisier de porc.**

Démontrer à court terme le potentiel de désodoration d'un consortium bactérien dégradant le phénol et le p-crésol en se rapprochant le plus possible des conditions rencontrées dans la fosse lors de l'entreposage et en évaluer la performance à l'aide d'un procédé faisant appel à des surfaces fixes.

Financing/*Financement:* Québec, ministère de l'Environnement

$72 859

**START/*DÉBUT***: *1988 10* **END/FIN**: *1991 03*

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## 0204-10

Bottenheim, J
(416) 739-4838

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Nitrogen chemistry**

To determine the role that peroxyacetyl nitrate (PAN) in the long range transport of oxides of nitrogen. To obtain insight into seasonal variability in the inorganic and organic end products of nitrogen in the atmosphere.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$33 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 04*

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## 0204-11

Brindle, I
(416) 688-5550

Brock University

**Investigations into the analysis of hydride-forming elements**

The simultaneous analysis of the maximum number of hydride-forming elements with the lowest possible detection limit (of the order of 10-100 ppt). Application of the above method to air filters. Transferrability of the hydride method to a continuous hydride generator for a preconcentration method for hydride-forming elements for potential application to surface waters and rain. Output: Ian D. Brindle and X. Le, 'D.C. Plasma atomicemission spectrometry in geochemical applications' (review), Geoscience Canada, June 19, 1989. Ian D. Brindle and X. Le, 'Reduction of interferences in the determination of germanium by generation of hydride and atomic emission spectrometry', Analytica Chimica Acta, June 30, 1989. See the OMOE's Inventory of R&D Projects for more listings.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$135 900

**START/*DÉBUT***: *1989 05* **END/FIN**: *1992 04*

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## 0204-12

Brown, G
(403) 291-1313

Western Research

**Risk assessment of photochemical oxidant effects on agricultural resources of the Fraser Valley, B.C.**

Ph.D. dissertation to be completed in August 1989.

Financing/*Financement:* University of British Columbia

Canadian Environmental Assessment Research Council

**START/*DÉBUT***: *1985 01* **END/FIN**: *1989 08*

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## 0204-13

Campbell, H
(416) 336-4717

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Environmental assessment of sludge conversion technology**

To assess the impacts of combustion of the synthetic fuel produced by the oil from sludge technology.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Department of Supply and Services Canada

$665 000

**START/*DÉBUT***: *1985* **END/FIN**: *ongoing*

## 0204-14

Chan, C
(416) 890-2555

Mann Testing Laboratory Ltd.

**Development of monitoring methods for odorous organics in ambient air**

To develop a complete sampling and analytical protocol for the low level determination and quantification of 4 classes of odorous compounds. The specific objectives are: to review available analytical methods for the sampling and analysis of the odorous organics in ambient air; to assess possible problems associated with the application of these methods under actual field conditions; to design and develop a suitable sampling and analytical protocol for each class of odorous compounds; to thoroughly evaluate the methods under both laboratory and field conditions. Output: Paper, presentation or report on the class 'Aliphetic Amines' and one for Carbonyl Compounds.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$185 000

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1990 10*

## 0204-15

Cheng, L
(403) 450-5260

Alberta Research Council; Resource Technologies Dept.

**A comparison of mesoscale scale deposition models as applied to northern Alberta and Saskatchewan**

To compare and evaluate the overall performance of three mesoscale acid deposition models (MESOPUFF II, RELMAP and SERTAD) with respect to their capability for northern Alberta and Saskatchewan.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$80 000

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1988 11*

## 0204-16

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of PAHs (polycyclic aromatic hydrocarbons)**

Methodology has been developed which allows the determination of 16 PAH compounds trapped in PUF samplers. Sample preparation includes extraction and column chromatography. Separation and detection is achieved by two runs on an HPLC equipped with a programmable fluorescence detector and a UV diode array detector. This method is being extended to include water samples.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0204-17

Coleman, R
Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Microbiological processes in waste management**

To study and provide data/information on domestic, industrial and agricultural wastes using microbiological processes and systems.

Financing/*Financement:* Alberta Agriculture

Alberta Technology Research & Telecommunications

Alberta Environment

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1991 12*

## 0204-18

Constable, M
(403) 468-8038

Environment Canada; Conservation & Protection; Environmental Protection

**Monitoring for airborne pesticide residues in Alberta and Saskatchewan using a unique passive monitor**

To determine if a passive organic vapor monitor can be used to monitor pesticide vapors in air.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 04*

## 0204-19

Dann, T
(613) 991-9459

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Development of ambient air monitoring methodologies for dioxins and furans**

Validate and document: a) design for a filtration/sorbent hivolume sampling system for dioxins/furans in ambient air; b) protocol for analysis of dioxins/furans on ambient air filter and puf samples. Obtain preliminary air concentration data of dioxins/furans at selected locations in Canada. Determine and document precision of sampling and analytical methods and develop QA/QC procedures for ambient monitoring of dioxins/furans. Prepare and disseminate a national reference method for dioxins/furans.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

Alberta Environment

British Columbia Ministry of Environment and Parks

$85 000

**START/*DÉBUT***: *1987 09* **END/*FIN***: *1990 03*

## 0204-20

Dann, T
(613) 991-9459

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Development of ambient air monitoring methodologies for volatile and semi-volatile organics**

To develop, validate and apply methodologies for sampling volatile and semi-volatile organics in urban ambient air. Target compound categories include - alkanes, alkenes, aromatics, alkylhalides, chlorinated aromatics, aldehydes, ketones, polycyclic aromatics, PCBs, chlorophenols and chlorobenzenes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$600 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *ongoing*

## 0204-21

Das, N
(403) 632-6761

Alberta Environmental Centre

**Analytical services, air**

Under this project analytical services are provided to Alberta Environment in support of the province's Air Quality Monitoring and Surveillance program.

Financing/*Financement:* Alberta Environment

## 0204-22

Davis, C
(416) 630-6331

Concord Scientific Corporation

**An evaluation of methods to determine the impact of residential wood burning on ambient air quality**

To compile and update in-depth information evaluating methods to determine the impact of residential wood burning on ambient air quality.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$34 400

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 04*

## 0204-23

Davis, R
(604) 387-9931

British Columbia Ministry of Environment & Parks

**Photochemical dispersion modelling analysis of ozone impacts in the Lower Fraser Valley, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0204-24

Davis, R
(604) 387-9931

British Columbia Ministry of Environment & Parks

**Dry SO2 deposition in the Lower Fraser Valley, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0204-25

Davis, R
(604) 387-9931

British Columbia Ministry of Environment & Parks

**Ozone impacts on forest seedlings in the Lower Fraser Valley**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0204-26

Davis, R
(604) 387-9931

British Columbia Ministry of Environment & Parks

**Meteorological assessment of acid rain in the Strait of Georgia/ Lower Mainland, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0204-27

den Hartog, G
Neumann, H
(416) 739-4860

Environment Canada; Atmospheric Environment Service; Air Quality &Inter-Environmental Research Branch

**Dry deposition - forests**

To measure atmospheric fluxes of gaseous and particulate pollutants to forests and to parametrize deposition rates to provide inputs to pollution transport and deposition model.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Fu nds

Environment Canada, Atmospheric Environment

$487 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-28

Depew, C
(613) 545-2628

Queen's University; Chemistry Department

**Integral model study of airborne chemical contaminants from chemical plants and research buildings: their detection, identification and a proposed method for their elimination**

To establish an integral model on a total study of some airborne contaminants originated from typical chemical plants and laboratories in Ontario. The model will select two typical classes of air pollutants: nitrogen oxides (inorganics) and substituted aromatic and polyaromatic hydrocarbons (organic). The overall model study involves the establishment of sampling and detection procedures, and the development of a new method for the elimination of the contaminants from air.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$104 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0204-29

Desautels, G
(514) 283-1601
Environment Canada; Atmospheric Environment Service; Quebec Region

**Ozone episode in Quebec**

Identify weather conditions and sources regions associated with strong ozone episode in Quebec.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$27 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-30

Diamond, G
(416) 965-4081
Ontario Ministry of the Environment; Air Resources Branch

**Hi-Vol/Denuder/Sorbent Sampling Scheme for Measurements of Polynuclear Aromatic Hydrocarbons, Ont.**

1. To evaluate a new PAH sampling scheme in the field. 2. To evaluate comparability of results obtained by sampling with and without denuders in the filtration scheme. 3. To determine precision using the proposed sampling scheme. 4. To obtain preliminary air concentration data of PAHs at selected sites in Ontario and in different seasons.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$105 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1988 06*

## 0204-31

Evans, W
(416) 739-4624
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Ozone research**

Conduct research on stratospheric ozone layer, operate ozone monitoring network and apply knowledge to environmental problem of depletion of the ozone layer.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1975 04* ***END/FIN***: *ongoing*

## 0204-32

Evans, W
(416) 739-4624
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Space shuttle flights of the SPEAM and BEAM (Sunphotometer and Brewer Ozone Spectrophotometer)**

Monitor environment from space researching the basic physical processes of the stratospheric, emphasizing ozone photochemistry. Apply this knowledge to environmental problems.

Financing/*Financement:* Industry Science and Technology Canada

**START/*DÉBUT***: *1984 04* ***END/FIN***: *ongoing*

## 0204-33

Feddes, J
(403) 492-4251
University of Alberta; Agricultural Engineering

**A study of air quality in commercial turkey rearing facilities**

To quantify rates of production of aerial contaminants (NH3, CO2, dust, water vapour) within commercial rearing facilities in Alberta during a bird cycle. Final report will be available.

Financing/*Financement:* Alberta Research Council

$32 000

**START/*DÉBUT***: *1987 12* ***END/FIN***: *1988 06*

## 0204-34

Fernbach, E
Guerriere, R
(416) 979-5042
Office of Research & Innovation; Ryerson Polytechnical Institute

**Energy conversion lab testing**

Provision of testing facilities and support staff for the testing of a catalytic woodburning furnace.

Financing/*Financement:* Industry

$18 000

**START/*DÉBUT***: *1987 01*

## 0204-35

Filion, L
Payette, S
(418) 656-3340
Université Laval; Centre d'études nordiques

**Analyse démographique et dendrochronologique des populations forestières dans les réserves écologiques de Tantaré et du Mont Mégantic.**

A Tantaré, une érablière à bouleau jaune est étudiée en détail du point de vue démographique dans le but d'établir les modalités de remplacement des deux espèces en présence (érable à sucre et bouleau jaune). L'analyse dendrochronologique permet d'étudier le pattern de croissance des arbres et de dégager l'influence des facteurs endogènes et exogènes sur la croissance radiale. Le même genre d'étude est effectué au Mont Mégantic, dans une sapinière à bouleau blanc.

Financing/*Financement:* Québec, ministère de l'Environnement

Fondation Ecotam

$80 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1989 03*

## 0204-36

Gagnon, G
Roy, G
(418) 643-7994
Ministère l'Energie et Ressources; Service de recherche appliquée

**Dépérissement et mortalité dans les érablières.**

Définit le lien existant entre les critères écologiques et végétatifs et le taux de dépérissement. Précise les facteurs (stress) prédisposants et déclenchants responsables du dépérissement et de la mort de nombreux érables. Propose des solutions au problème du dépérissement. Cette étude pourra également mieux adapter les techniques d'aménagement aux divers types d'érablières et de prévenir ainsi tout dépérissement futur en diminuant les stress subis par le milieu. Rapport disponible: oui

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$144 300

## 0204-37

Gilbert, R
(514) 748-5844

Météoglobe Canada Inc

**Revue littéraire et aperçu d'applicabilité des méthodes d'évaluation des degrés d'odeurs causées par les fumiers.**

Inventorier les différentes approches du problème de l'évaluation des degrés d'odeur, suggérer des solutions possibles pour améliorer ou remplacer la méthode par tests olfactométriques, proposer des avenues de recherche et développement, le cas échéant, basées sur des critères de coûts, de performance et de facilité d'utilisation.

Financing/*Financement:* Québec, ministère de l'Environnement

$19 313

**START/*DÉBUT***: *1988 10* **END/*FIN***: *1989 03*

## 0204-38

Gilbert, R
(514) 748-5844

Météoglobe Canada Inc

**Revue et analyse de littérature sur les modèles photochimiques.**

Effectuer une revue de littérature visant la classification des modèles photochimiques existants en fonction de leur complexité et de leur potentiel d'utilisation, et recommandation d'un modèle applicable au Québec.

Financing/*Financement:* Québec, ministère de l'Environnement

$19 248

**START/*DÉBUT***: *1988 06* **END/*FIN***: *1988 12*

## 0204-39

Hallman, E
(705) 675-1151

Laurentian University; Physics/Astronomy

**The lifetimes and pathways of the diesel particulate and the PAHs in dieselized underground mines**

To examine the relationship between diesel particulates and the polycyclic aromatic hydrocarbon content of diesel exhaust in an underground mine environment. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

Falconbridge Nickel Mine Ltd.

$107 400

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1987 07*

## 0204-40

Hamaliuk, G
(416) 624-5700

Domtar Inc.

**Development of a hydrocarbon vapour collection and destruction system**

1) To reduce emissions of volatile hydrocarbons from coal tar pitch storage tanks; 2) To conserve energy by burning collected hydrocarbons in an existing boiler; 3) To determine the operational efficiency of the collection/destruction systems and its operability during cold weather. Final report under review.

Financing/*Financement:* Panel on Energy Research and Development

Domtar Inc.

$395 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1988 03*

## 0204-41

Havlena, J
(403) 220-7418

University of Calgary; Department of Chemical & Petroleum Engineering

**(2) AP - Monitoring technology. Remote sensing of gaseous pollutants from sour gas plant emissions**

Development of commercial instrumentation based on densitometric evaluation of monochromatic sour gas plume photography for quantitative monitoring of atmospheric dispersion of NO2 and SO2.

Financing/*Financement:* University of Calgary

## 0204-42

Heddle, J
(416) 667-3053

Department of Biology; York University

**Experimental Mutation Rates in Lung and Brochial Epithelia as a Primary Air Pollution Standard**

Development of a mutagenic test for atmospheric contaminants using cells derived from the lining of the lung and the bronchus.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$198 000

**START/*DÉBUT***: *1985 01*

## 0204-43

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluate the levels of VOC, semi-VOC and trace metals from the exhaust of light duty passenger cars in city, urban and highway driving conditions.**

To investigate the contribution of vehicle exhaust to the levels of toxic compounds in city and urban areas in Canada.

Financing/*Financement:* Environment Canada, Conservation & Protection

$10 000

**START/*DÉBUT***: *1989 03* ***END/FIN***: *1989 09*

## 0204-44

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Laboratory

**The effects of alcohol fuels (85% methanol) on vehicle catalysts at ambient conditions**

To determine the effects on a vehicle catalyst when the vehicle is fuelled with high blend methanol by evaluating the alcohol and aldehyde/ketone emissions at ambient temperature conditions. Testing includes emission sampling with and without a catalyst and the determination of the catalyst light-off points. Final reports available from V. Battista.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada

$13 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1987 10*

## 0204-45

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaporative emission from test fleet of methanol fuelled vehicles during the life span of vehicles**

To determine the deterioration effects of methanol on a vehicle's evaporative emission system, and to evaluate the evaporative emission levels on vehicles as they deteriorate through normal mileage accumulation. Final reports available from V. Battista.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada

$10 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1989 11*

## 0204-46

Hendren, F
Howes, P
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Low blend alcohol fuels exhaust and evaporative emissions at ambient temperatures**

To determine the levels of alcohol and aldehyde/ketone emissions from vehicles fuelled with low blend alcohol fuels (5% methanol and 10% ethanol) with various co-solvents and reid vapour pressures tested at standard and ambient temperatures. Vehicle testing to be conducted on both light duty and light/heavy duty vehicles. Interim and final reports will be available from C. Wachmann, Industrial Programs Branch, DOE - C&P, (819) 953-1140.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 07*

## 0204-47

Hendren, F
Ostrouchov, N
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Ambient temperature testing of three-way catalyst equipped vehicles**

To determine the effects of ambient temperature (-25 C to 25 C) on exhaust emissions from vehicles equipped with three-way catalysts tested under both city and highway conditions. Final report will be available from Dr. N. Ostrouchov.

Financing/*Financement:* Environment Canada, Conservation and Protection

$20 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 05*

## 0204-48

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluation of exhaust emissions from urban buses operating on commercially available diesel fuels and potential alternative fuels.**

To investigate the regulated and non-regulated emissions from buses designed to operate as urban transportation vehicles including potential alternative fuels such as alcohol and CNG.

Financing/*Financement:* Environment Canada, Conservation & Protection

Energy, Mines and Resources Canada

Department of Transport Canada

**START/*DÉBUT***: *1989 11* ***END/FIN***: *1991 07*

## 0204-49

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Exhaust emissions from industrial off-road vehicles. (Pilot project)**

To evaluate the regulated and non-regulated emissions from the exhaust of industrial off-road vehicles operating on standard duty cycles.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1989 09*

## 0204-50

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Characterization of exhaust emissions from diesel vehicles operating on 1990's diesel fuel based on tar sands oil.**

To investigate and compare the exhaust emissions from existing commercially available diesel fuel to a diesel fuel made from the tar sands oil.

Financing/*Financement:* Environment Canada, Conservation & Protection

National Research Council

$6 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1989 09*

## 0204-51

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Non-regulated vehicle exhaust emission evaluation at ambient temperatures**

To evaluate the emission levels of non-regulated toxic emissions from light duty passenger vehicles tested in ambient conditions. The project includes developing procedures and instrumentation for implementation at the facility after reviewing existing studies. The non-regulated emissions to be investigated will include: benzene, sulfur, dioxins, aldehydes and others.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *ongoing*

## 0204-52

Hoff, R
(416) 859-5122

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Differential absorption lidar development (DIAL)**

Study spatial distribution of ozone and sulphur dioxide. The systems need to be well tested before being used in Eulerian model validation (1988-89 and after).

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$66 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-53

Jervis, R
(416) 978-3071

University of Toronto; Dept. of Chemical Engineering

**Determination of source-receptor links by size-specific multielemental inorganic component determination and modelling**

To do sufficient repeat sampling at selected locations & analyze for 20-25 trace elements to permit source profiles to be established and receptor modelling to be performed. If particle size-sorting is necessary, it is particularly important for analytical methods to be sensitive in the microgram range and lower for each filter and fraction. Output: Masters Theses: Zhijun, Kang, 1988. A study of aerosol characterization & source apportionment at Ontario sites using receptor modelling. Chan, Albert C., 1989. The assessment of ambient particulates by multielement radioanalytical & receptor modelling techniques. Report: Jervis, Kang & Chan. Multicomponent factor analysis of INAA, IPAA & XRF aerosol data for assessing the health significance of incinerator & industrial sources.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$93 300

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0204-54

Johnson, N
(416) 822-4111

ORTECH International

**Development and evaluation of a gas and particle (GAP) sampler for semi-volatile chlorinated organic compounds in ambient air**

A multiphased project to design and develop a molecular diffusion denuder based air sampling system to separate and collect vapour/ particle fractions of airborne semivolatile organochlorine compounds (eg. PCBs, OC pesticides). Additional phases were conducted to evaluate the performance with replicate measurements at background, urban area and near source locales and to fabricate prototype instruments for use by Environment Canada in determining atmospheric deposition rates of such toxic compounds. Several reports, etc. are avaliable for these studies.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$611 000

**START/*DÉBUT***: *1984 09* ***END/FIN***: *1989 08*

## 0204-55

Jones, R
(416) 456-2504

Phytotoxicology Section; Air Resources Branch; Ontario Ministry of the Environment

**Fluoride Criteria Studies**

To conduct a series of controlled environment exposures to evaluate the current (proposed) 24 hour gaseous fluoride criteria in air, with respect to injury to vegetation.

Financing/*Financement:* Ontario Ministry of the Environment, Air Resources Branch

$98 000

**START/*DÉBUT***: *1985 11*

## 0204-56

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Characterization and control of malodorous emissions at oil/natural gas fields (PERD project 67229)**

Phase 1 - identify and characterize sources of odorous and dangerous air emissions in oil and gas fields, report completed. Phase 2 - develop a method manual to monitor and audit equipment performance in the field.

Financing/*Financement:* Panel on Energy Research and Development

$100 000

**START/*DÉBUT***: *1984 08* **END/*FIN***: *1988 08*

## 0204-57

Kemper, B
(403) 427-5893

Alberta Environment; Environmental Quality Monitoring Branch

**Exposure stations**

To give an indication of sulphation and hydrogen sulphide deposition in the vicinity of urban and industrial areas and to provide some information regarding spatial distibution. (Data summaries available Air Quality Control Branch, Alberta Environment).

Financing/*Financement:* Alberta Environment

**START/*DÉBUT***: *1973*

## 0204-58

Kilner, T
(416) 979-5042

Office of Research and Innovation; Ryerson Polytechnical Institute

**The development of a sample preparation method for identification of airborne particulates**

To develop a method for the preparation of air particulate samples for electron microscopic analysis. A diamond-knife technique was developed and successfully tested. A report was prepared. A paper was presented at the 1987 Technology Transfer Conference.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1986 03* **END/*FIN***: *1987 03*

## 0204-59

King, K
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Determining the CO2 exchange between the atmosphere and a large forest area**

To determine the exchange of carbon dioxide between the atmosphere and extensive areas of agric. crops and forest using the Bowen ration and computer simulation approaches.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

## 0204-60

Kozak, J
Moores, W
(902) 426-6132

Environment Canada; Conservation & Protection

**New Brunswick - Nova Scotia oxidants study update**

To update a previous study (1983) on oxidant levels in this region, and to determine the course of elevated oxidant levels through back trajectories. Final report completed March 1988.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

$40 000

**START/*DÉBUT***: *1987 12* **END/*FIN***: *1988 03*

## 0204-61

Laflamme, D
Gagnon, G
(418) 643-7994

Ministère l'Energie et Ressources; Service de recherche appliquée

**Impact des différents stress environnementaux sur la dynamique et la productivité des écosystèmes forestiers.**

Evalue l'apport des polluants atmosphériques afin d'établir des relations entre la quantité et la qualité des polluants et la productivité forestière, l'importance des facteurs climatiques sur l'état de santé et la vitalité des peuplements forestiers, et l'effet des maladies et des insectes en tant que stress naturel. Etudie l'impact des polluants atmosphériques sur la disponibilité des éléments nutritifs et sur la toxicité des métaux lourds afin d'établir des relations de cause à effet sur différentes essences forestières. Evalue l'importance des différents stress environnementaux sur la productivité forestière et sur la dégradation de l'état de santé des forêts.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$376 400

## 0204-62

Lagueux, J
(418) 656-7645

Université Laval; Département de médecine sociale et préventive

**Etude de faisabilité sur le développement d'une stratégie d'évaluation du potentiel génotoxique d'échantillons environnementaux.**

Proposer une stratégie d'évaluation de la génotoxicité des micropolluants de l'environnement par une batterie de bioessais in vitro. Justifier le choix des bioessais et décrire les protocoles. Proposer une méthode de validation en laboratoire des bioessais. Proposer un schéma décisionnel.

Développer une stratégie de validation de la batterie par des études de population.

Financing/*Financement:* Québec, ministère de l'Environnement

$15 000

**START/*DÉBUT***: *1987 12* ***END/FIN***: *1988 03*

## 0204-63

Lane, D
Schroeder, W
(416) 739-4473

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Organic gas/particle sampler (GAP - sampler)**

Utilization of the GAP sampler to measure atmospheric concentration of alpha and gamma HCH, HCB and PCBs and to estimate the gas/ particle phase concentration ratio.

Financing/*Financement:* Great Lakes Water Quality

Environment Canada, Atmospheric Environment

$86 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 04*

## 0204-64

Le-Huy, P
(819) 376-5071

UQTR; Groupe de recherche en applications industrielles

**Conception d'un système intégré pour la dépollution de l'air contaminé par le styrène.**

Le but principal de cette recherche est de concevoir un système intégré pour la dépollution de l'air contaminé par du styrène. L'étude vise à atteindre les objectifs suivants: Développement d'un système rapide de détection et d'analyse in situ du styrène; traitement numérique des signaux de l'analyse quantitative en vue de bâtir un système de contrôle des vapeurs du styrène; optimisation mécanique des éléments physiques du détecteur; élaboration des algorithmes, sur micro-ordinateur, d'utilisation optimale du détecteur dans un shéma intégré de décontamination de l'air pollué par du styrène. Etant donné l'urgence du problème, les retombées sont immédiates aux différents points de vue: technologique: Disponibilité d'un système intelligent et fiable de détection, in situ, des vapeurs.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

## 0204-65

Lee-Ruff, E
(416) 736-2100

Department of Chemistry; York University

**Syntheses of Oxygen and Sulphur PAHs of Interest in Environmental Pollution and Toxicology**

To prepare polynuclear aromatic hydrocarbon compounds for use as chemical standards in the analysis of air particulate matter.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$33 500

**START/*DÉBUT***: *1984 08* ***END/FIN***: *1987 05*

## 0204-66

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Ecosystem acidification and the trace element analysis of conifer wood**

To examine the trace element composition of pine wood using stepwise PIXE (Proton Induced X-Ray Emission Spectroscopy) to determine if a historical record of changing soil chemistry due to long term acidic deposition from a point source may be preserved in the wood.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$63 717

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1989 03*

## 0204-67

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Acidification in a temperate forest ecosystem and the role of sulphur gas emissions and sulphur dust**

To evaluate the effects of accelerated acidification on a temperate forest ecosystem exposed to sulphur dust emissions and long term low concentrations of sulphur gas emissions.

Financing/*Financement:* Whitecourt Environmental Study Group

$86 500

**START/*DÉBUT***: *1981 05* ***END/FIN***: *1988 03*

## 0204-68

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Long-term effects of low sulfur dioxide concentrations on alfalfa productivity**

1. To apportion the specific relative contributions of SHERCO Units 1 and 2 emissions to the sulfur content of crops and soils in the region; 2. To determine the relationships between any changes in crop and soil sulfur as attributable to point (1) and crop productivity; and 3. To develop numerical relationships between ambient SO2 concentrations and observed changes in crop productivity.

Financing/*Financement:* Northern States Power Company

**START/*DÉBUT***: *1983 01* ***END/FIN***: *1987 06*

## 0204-69

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**The effects of nitrogen oxides on native vegetation near compressor installations in Alberta**

The main overall objectives of this research project were to determine the sensitivity of selected plants species to injury by low concentrations of NO and/or NO2 and to determine whether selected plant species will acclimate to low concentrations of NO and/or NO2 stress.

Financing/*Financement:* Alberta Environment

$542 845

**START/*DÉBUT***: *1980 04* **END/*FIN***: *1985 03*

## 0204-70

Letreman, J
(403) 743-6687

Suncor, OSG

**Supplementary emission control**

Develop a meteorologically controlled emission control method.

Financing/*Financement:* Suncor Inc.

## 0204-71

Letreman, J
(403) 743-6687

Suncor Inc, O.S.G.

**Forest biomonitoring**

Annual assessments of forest health, air pollution effects, and forest protection.

Financing/*Financement:* Suncor Inc.

## 0204-72

Liem, A
Pandompatam, B
(403) 632-6761

Alberta Environmental Centre

**Waste incineration research**

Support formulation and enforcement of regulatory satandards. Assist industry in meeting compliance cost-effectively. Transfer technology and disseminate information. Research areas include optimization of incinerating conditions, emission monitoring/ measurements, mechanisms of formation of trace organic compounds and quality assurance of trial burns. This is an in-house long term project utilizing the pilot, bench and lab-scale facilities and the associated air pollution control/monitoring systems that have been developed.

Financing/*Financement:* Alberta Environmental Centre

$4 000 000

**START/*DÉBUT***: *1984 04*

## 0204-73

Lusis, M
(416) 965-1634

Air Resources Branch; Ontario Ministry of the Environment

**Toxics Deposition Sampler Development**

To develop samplers with which the wet and dry deposition of PCBs, PAHs, various pesticides and dioxins/furans can be determined.

Financing/*Financement:* Ontario Ministry of the Environment, Air Resources Branch

$390 000

**START/*DÉBUT***: *1983*

## 0204-74

Macalla, D
(416) 525-9140

McMaster University; Dept. of Biochemistry

**Hamilton air: chemical compostion and genotoxic activity of respirable particulate and organic vapours**

To determine what levels of airborne mutagenicity can be detected on respirable particles in the Hamilton airshed as a function of season and meteorological conditions. Determine if a simple mammalian index of genotoxic hazard can be developed using a post labelling technique which permits the quantitation of DNA adducts formed with activatied carcinogens. Determine what chemical classes contribute to the mutagenicity of Hamilton air. Determine how total airborne mutagenicity is related to the air quality index.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$13 000

**START/*DÉBUT***: *1988 01* **END/*FIN***: *1990 12*

## 0204-75

Mackay, D
(416) 978-4019

Institute for Environmental Studies; University of Toronto

**Studies of environmental fate, effects and modelling of contaminants in the environment**

To gather and correlate physical-chemical data, measure transport rates in the environment and assemble mathematical models of contaminant behaviour as they migrate between air, water, soils and sediments.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1972 00*

## 0204-76

MacKenzie, A
(514) 457-2000

Collège MacDonald; Département des ressources renouvelables

**Réduction des odeurs du lisier de porc à l'entreposage.**

Evaluer le potentiel de réduction des odeurs du lisier de porc à l'entreposage par l'addition de phosphate monocalcique monohydrate, de soufre élémentaire et de tourbe de sphaigne. Evaluer l'interaction entre l'acidification et l'aération; suivre l'évolution du degré d'odeurs; évaluer les mécanismes en cause; développer un système applicable à la ferme.

Financing/*Financement:* Québec, ministère de l'Environnement

$111 600

**START/*DÉBUT***: *1988 10* **END/*FIN***: *1991 03*

## 0204-77

MacTavish, D
(416) 739-4847

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**CAPMoN chemical analysis**

To measure atmospheric particle, nitric acid and sulphur dioxide from samplers of the air monitoring network.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$155 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-78

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**Air sampling methods for new anti-sapstain chemicals**

To develop sampling methods for ambient air and emissions for two new anti-sapstain chemicals introduced in forest products industry of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$60 000

**START/*DÉBUT***: *1988 05* **END/*FIN***: *1989 05*

## 0204-79

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**PCP incineration study in the pulp mills of B.C.**

To determine the emission characteristics and impact on air quality including dioxins when PCP-treated wood wastes are incinerated in the power boilers. Report on the design and plan for the test burn is available.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

Environment Canada, Conservation and Protection

$225 000

**START/*DÉBUT***: *1987 05*

## 0204-80

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**Impact of residential woodstoves**

To determine the impact of residential wood combustion on air quality in selected communities of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$50 000

**START/*DÉBUT***: *1987 10*

## 0204-81

Mauffette, Y
(514) 282-7752

Université du Québec à Montréal; Département des sciences biologiques

**Impact du dépérissement des érablières sur les communautés d'insectes forestiers et d'oiseaux insectivores.**

Déterminer les effets du dépérissement sur les insectes forestiers a) effet sur la diversité des communautés b) effet sur l'abondance. Déterminer les effets du dépérissement sur les communautés d'oiseaux a) leur diversité b) leur succès de prédation.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

Fonds mondial pour la nature Canada

$63 000

**START/*DÉBUT***: *1988 05* **END/*FIN***: *1989 05*

## 0204-82

Mickle, R
Lo, A
(416) 739-4851

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Pesticide off target drift**

To evaluate spray drift model and develop instrument for spray cloud mapping.

Financing/*Financement:* Industry

$20 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-83

Olson, M
(416) 739-4870

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Lagrangian model**

To use the Lagrangian model to compute trajectories, and sulphur dioxide and sulphate concentrations. Also used to investigate transboundary sulphur fluxes between USA and Canada as well as budgets and source-receptor relationships.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$145 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-84

Peake, E
(403) 220-3194

Kananaskis Centre for Environmental Research; University of Calgary

**Wet and dry deposition in Alberta**

To measure wet and dry deposition in Alberta based on measurements of air quality and deposition velocity of SO2 as well as rainfall.

Financing/*Financement:* Acid Deposition Research Program (Alberta)

$500 000

**START/*DÉBUT***: *1985 12*

## 0204-85

Peake, E
(403) 220-3194

Kananaskis Centre for Environmental Research; University of Calgary

**Atmospheric chemisty near a thermal power plant at Lake Wabamum, Alberta**

To determine the amount of atmospheric deposition in the form of rainfall, acid forming gases and basic gases, and fine particles near a coal fired power plant.

Financing/*Financement:* Western Research Division of Bow Valley Resources

Trans Alta Utilities

$18 345

**START/*DÉBUT***: *1986 10* **END/FIN**: *1987 09*

## 0204-86

Pengelly, L
Goldsmith, C
(416) 525-9140

McMaster University

**Effect of Fine Particles on The Respiratory Health of a Cohort of Young People**

To obtain epidemiological evidence in support of a fine particle standard based on data already collected using the Andersen 2000 Cascade Impactor.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$145 000

**START/*DÉBUT***: *1986 09* **END/FIN**: *1989 01*

## 0204-87

Poon, D
(604) 666-2862

Environment Canada; Conservation and Protection; Environmental Protection

**Characterization & control of odourous emissions from oil & natural gas fields in British Columbia**

To characterize and assess controls of odour emissions from oil and natural gas production fields in Fort St. John, B.C. area. An emission audit manual to be produced for use by field operators and regulatory agencies to properly assess odourous emissions. In 1984-85 report completed for Phase 1 - odour emission identification and characterization. In 1986-87 report completed for Phase 2 - emission quantification and control assessment. In 1988-89 an emission audit manual is to be produced.

Financing/*Financement:* Panel on Energy Research and Development

$125 000

**START/*DÉBUT***: *1984 06* **END/FIN**: *ongoing*

## 0204-88

Puckett, K
(416) 739-4836

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Eulerian model development**

Inter agency project to develop an acidic deposition and oxidant model (ADOM) using Eulerian approach. Final version of the model to be developed in 87-88 and field evaluation will take place in 88-89.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1983* **END/FIN**: *1991*

## 0204-89

Rooney, D
(416) 630-6331

Concord Scientific Corporation

**Augmentation of List of Toxic Chemicals**

To update chemical list for toxic gas release emergency program and to augment search routines.

Financing/*Financement:* Ontario Ministry of the Environment, Air Resources Branch

$23 200

**START/*DÉBUT***: *1987 03*

## 0204-90

Roy, G
(418) 643-7994

Ministère l'Energie et des ressources; Service de recherche appliquée

**Analyse phytosociologique et dendrochronologique dans les érablières dépérissantes des Appalaches.**

Etablir un modèle de croissance radiale de l'érable à sucre représentatif des érablières appalachiennes: les données sont recueillies à partir d'un réseau de 133 parcelles d'études semi-permanentes et rassemblent divers types écologiques. L'étude permet de dégager l'influence et l'importance de stress naturels et anthropiques sur l'évolution du dépérissement. Ce projet s'échelonne sur plusieurs années, ce, depuis 1983, est encore en cours de réalisation en 1989 et devrait se poursuivre durant les prochaines années.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$144 000

**START/*DÉBUT***: *1983*

## 0204-91

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Etudes de dispersion - aluminerie de Jonquière**

Modélisation de la dispersion des émissions atmosphériques de contaminants de l'aluminerie de Jonquière.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$45 000
**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0204-92

Schemenauer, R
Anlauf, K
(416) 739-4606

Environment Canada; Atmospheric Environment Service

**Chemistry of high elevation fog (CHEF)**

To study the chemical composition of fog in high elevation area. To compare the pH of fog water to pH of precipitation in surrounding areas. Compare ozone concentration in mountain top and surrounding valleys.

Financing/*Financement:* Environment Canada, Atmospheric Environment

Long Range Transport of Airborne Pollutants Program Funds

$285 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0204-93

Stein, J
(418) 656-2945

Université Laval; Centre de recherche en biologie forestière

**Simulation du transport des polluants atmosphériques dans les écosystèmes forestiers et aquatiques.**

Ce programme de recherche représente un élément important du programme d'évaluation de l'impact des précipitations acides sur les écosystèmes aquatiques et forestiers où l'on veut définir des seuils de dépôts atmosphériques acceptables et vérifier ces seuils cibles au moyen de modèles prédictifs d'impact. L'objectif du programme consiste à développer un simulateur mathémathique des processus chimiques et hydrologiques à l'échelle d'un bassin versant et de le vérifier à l'aide de données prises sur le terrain. L'hiver et le printemps sont les périodes choisies pour simuler le cheminement des composantes chimiques dans l'écosystème forestier. L'étude est effectuée sur le bassin du lac Laflamme à la station expérimentale de la forêt Montmorency de l'Université Laval.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec: FCAR, Canada: CRSNG

Fonds institutionnel de recherche

$566 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1990 08*

## 0204-94

Stelzig, A
(819) 953-1134

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Review of current cleanup criteria, methodology for establishing cleanup criteria**

Report submitted to CCREM, March 1987 - 'Inventory of Cleanup Criteria and Methods to Select Criteria' (IP-71). Develop a methodology for establishing site specific cleanup criteria for application across Canada. Final report will be submitted to CCREM in September 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Alberta Environment

Ministere de l'Environnement du Quebec

$800 000

**START/*DÉBUT***: *1987 02* ***END/FIN***: *1988 09*

## 0204-95

Strachan, W
(416) 336-4775

Lakes Research Branch; National Water Research Institute; Environment Canada

**Environmental distribution of toxic chemicals**

Investigate the role of the atmosphere in loading toxic chemicals to Canadian surface waters.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0204-96

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Sulphur gases and organic hydrocarbons relative to industrial development**

To assess the input of reduced sulphur gases and organic hydrocarbons from gas processing facilities as well as other industrial development in relation to background levels as determined at a remote mountain location in Alberta. The findings of this project are contained in an overall report on biophysical aspects of acid deposition in Alberta submitted to the Acid Deposition Research Program (ADRP).

Financing/*Financement:* Canadian Petroleum Association

Alberta Environment

$200 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1988 06*

## 0204-97

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Air monitoring program for the Swan Hills special waste management facility**

To assess the background organic compounds in the vicinity of the proposed waste incineration site near Swan Hills prior to the operation of the facility. A report of the findings

has been submitted to Western Research and subsequently to the Alberta Special Waste Management Corporation.

Financing/*Financement:* Western Research Division of Bow Valley Resources

Alberta Special Waste Management Corporation

$29 000

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1987 08*

## 0204-98

Sushan, B
(416) 221-9066

SCIEX (Division of MDS Health Group Ltd.)

**Taga 6000 Method for Measurement of Dioxin and Furan Emissions at Municipal Solid Waste Incinerators**

To assess cost effectiveness and practicality of a methodology to rapidly determine dioxins and furans at municipal solid waste incinerators.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$141 000

**START/*DÉBUT***: *1985 01* ***END/FIN***: *1987 12*

## 0204-99

Szakolcai, A
(416) 965-4081

Ontario Ministry of the Environment; Air Resources Branch

**Sampling scheme using hi-vol/sorbent cartridge for sampling of dioxins/furans in ambient air in Ontario**

To evaluate a Hi-Vol/PUF sorbent sampler for dioxins/furans in ambient air. To evaluate optimum flow rate, sampling efficiencies and precision for sampling dioxins/furans in ambient air. To obtain preliminary air concentration data of dioxins/furans at slected locations in Ontario.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$133 100

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1988 06*

## 0204-100

Tashiro, C
(416) 235-5897

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Method Development for Determination of Chlorinated Dibenzo-p-dioxins/Dibenzofurans in Ambient Air**

To develop a method for the determination of dioxins and furans in ambient air so that the transport of dioxins/furans in the atmosphere can be studied.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$34 000

**START/*DÉBUT***: *1987 10*

## 0204-101

Telang, S
(403) 220-6375

Kananaskis Centre for Environmental Research; University of Calgary

**Environmental audit: Swan Hills monitoring program**

To review the reports on the baseline studies conducted at the Swan Hills landfill site. Five reports on air, soil, vegetation, groundwater, surface water, and aquatic biota were reviewed. Final report available from Chem-Securities Ltd., Calgary.

Financing/*Financement:* Chem-Securities Ltd.

**START/*DÉBUT***: *1987 08* ***END/FIN***: *1987 11*

## 0204-102

Thivierge, R
(514) 697-3273

Eco-Recherche Inc.

**Mesure d'ozone en milieu rural**

Operer un sous-réseau de mesures de l'ozone dans l'air ambiant, en milieu rural et analyser les données et les trajectoires des masses d'air. Identifier les tendances; étude terminée; rapport final disponible (en français).

Financing/*Financement:* Environnement Canada, Conservation et protection

$25 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1988 03*

## 0204-103

Tollefson, E
(403) 220-5754

Department of Chemical & Petroleum Engineering; University of Calgary

**Oxidation of low concentrations of hydrogen sulfide in natural gas over activated carbon catalysts**

The objective was to remove hydrogen sulfide in low concentrations from natural gas by oxidation with air using an activated carbon catalyst. The hydrogen sulfide is converted to sulfur and water which can readily be collected, the sulfur being a saleable product.

Financing/*Financement:* Canadian Gas Processor's Association

Natural Sciences and Engineering Research Council

$35 000

**START/*DÉBUT***: *1983 06*

## 0204-104

Tollefson, E
Hall, E
(403) 220-5754

University of Calgary; Dept. of Chemical & Petroleum Engineering

**Process for desulfurization of coke produced in recovering synthetic crude oil from bitumen**

To develop a process for the removal of sulphur from coke produced by Syncrude Canada Ltd. and Suncor Inc. Removal of a major portion of the sulphur present in the coke would make it feasible to burn the coke as a relatively clean

fuel. Reports are available through Alberta Oil Sands Technology and Research Authority in Edmonton.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT***: *1975 04*

## 0204-105

Toupin, P
(514) 639-1550

Centre de recherche industrielle du Québec

**Traitement des substances organiques volatiles des imprimeries par le système de biofiltration**

Permettre aux industries de l'imprimerie de réduire leurs émissions de substances organiques à l'atmosphère afin de respecter le règlement 90 relatif à l'assainissement de l'air de la communauté urbaine de Montréal. C'est à ce titre que la communauté est impliquée dans le suivi de ce projet dont la réalisation relève de l'Association des industries du plastique.

Financing/*Financement:* Québec, ministère de l'Environnement

Québec, ministère de l'Industrie et du Commerce

$14 578

**START/*DÉBUT***: *1985 07* **END/*FIN***: *1986 07*

## 0204-106

Trivett, N
(416) 739-4447

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Alert Research Station**

To measure and explain the trend in carbon dioxide and other radiatively active gases in the Canadian environment.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$155 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-107

Trivett, N
(416) 739-4447

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Flask sampling program ($CO_2$)**

To analyse $CO_2$ flask sampling at Alert, Cape St. James and Sable Island. To carry and inter comparison of this data with other station (Mauna Loa).

Financing/*Financement:* Environment Canada, Atmospheric Environment

$53 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-108

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Etude des boues des eaux usées: effet des pluies acides et de l'incinération sur leur contenu en métaux lourds.**

Evaluer l'impact des pluies acides et de l'incinération sur les boues issues du traitement des eaux usées. Objectifs: reproduire en laboratoire les conditions naturelles de la lixiviation des boues par les pluies acides; étudier les mécanismes des transformations chimiques que subissent les métaux et leurs oxydes lors de l'incinération des boues des eaux usées.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$20 000

## 0204-109

Vet, R
(416) 739-4853

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**National atmospheric chemistry database (NatChem)**

Establish a permanent archive with multi-network summary reports for Canadian atmospheric deposition data.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$95 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 04*

## 0204-110

Vet, R
McNair, S
(416) 739-4853

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**CAPMoN (Canadian Air and Precipitation Monitoring Network)**

To maintain air and precipitation monitoring stations and subject the data to stringent quality assurance.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$759 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *ongoing*

## 0204-111

Villeneuve, J
(418) 654-2532

Université du Québec; INRS-eau

**Interprétation et représentation de la distribution spatiale et temporelle des dépôts acidifiants en utilisant la géostatistique.**

Interprétation et représentation de la distribution spatio-temporelle des dépôts acidifiants en utilisant la géostatistique. Permettre de prédire l'apport ou la perte de précision que causerait l'ajout, l'élimination ou le déplacement d'un ou plusieurs sites d'échantillonnage.

Financing/*Financement:* Québec, ministère de l'Environnement

$53 750

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 08*

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## 0204-112

Voldner, E
(416) 739-4670

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Atmospheric loading**

To investigate the pathway of selected toxic chemicals, and to estimate concentrations in air and precipitation and net atmospheric input of these chemicals for regions in North America.

Financing/*Financement:* Great Lakes Water Quality Long Range Transport of Airborne Pollutants Program Funds

$150 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 04*

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## 0204-113

Wituschek, E
(604) 666-2815

Environment Canada; Conservation and Protection; Environmental Protection

**Test burn of chlorophenol contaminated wood wastes**

To characterize the emissions (chlorophenol, dioxin, furans), assess environmental impacts and develop emission and air quality criteria for the burning of wood wastes contaminated by chlorophenols. Tests were completed on Sept. 25, 1987. Report scheduled for July 1989.

Financing/*Financement:* Energy, Mines and Resources Canada

British Columbia Ministry of Environment and Parks

Environment Canada, Conservation and Protection

$210 000

**START/*DÉBUT*:** *1986 09* **END/*FIN*:** *1987 09*

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## 0204-114

Wojtiw, L
(403) 450-5280

Alberta Research Council

**The role and importance of particulate emissions in the precipitation chemistry of western and northern Canada**

The purpose of the study is to consider the role of atmospheric dust in the chemistry of precipitation. Report available: Saskatchewan Research Council F-906-24-B-88, Oct. 1988.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

## 0205-1

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Evaluation of climate change impacts on wetlands**

Report in support of IPCC Working Group II.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$3 000

**START/*DÉBUT***: *1989 06* ***END/FIN***: *1989 09*

## 0205-2

Beckett, P
Courtin, G
(705) 675-1151

Laurentian University; Biology

**Remote sensing and geobotany as an aid to mineral exploration in northern terrains**

To understand the geochemical & biochemical processes involved in the release & uptake of various metals from bedrock & overburden into the various tissues of vascular (trees & shrubs) & nonvascular (lichen, mosses & fungi) plants. Interim reports available.

Financing/*Financement:* Ontario Geological Survey

Centre in Mining & Mineral Exploration

$138 150

**START/*DÉBUT***: *1986 01*

## 0205-3

Bergeron, Y
Simon, J-P
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Effets du régime des feux sur la distribution, la dynamique et la structure génétique des populations d'arbres.**

Etablir le régime des feux (fréquence, étendue, sévérité) d'une portion de la forêt boréale abitibienne. Evaluer les facteurs qui contrôlent le régime des feux (climat, topographie, âge, et type de forêts). Evaluer les effets du régime de feu sur la distribution et la dynamique des espèces arborescentes. Evaluer l'effet du régime de feu sur la structuration génétique des populations.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Conseil de recherche en sciences naturelles et en génie

$78 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1988*

## 0205-4

Bottenheim, J
Anlauf, K
(416) 739-4838

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Atmospheric nitrogen**

To study oxidant chemistry, nitrogen budget and the influence of H2O2 and CH2O; study seasonal changes in relative contribution of nitrogen and sulphur chemical to atmospheric acidity; to provide chemical data for Eulerian model evalution (1988-89).

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Atmospheric Environment

$98 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-5

Brugman, M
(306) 975-5966

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mountain hydrology and glacier meltwater**

Review all elements of glacial hydrology of most direct relevance to Canada and the mandate of NHRI and propose a comprehensive, long-term research program to address the problems identified, by March 1, 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

## 0205-6

Carswell, A
(416) 736-2100

Dept. of Physics; York University

**Lidar Atmospheric Observatory of Provincial Centre of Excellence, Institute for Space & Terrestrial Science (ISTS)**

To use laser radar (LIDAR) methods for studying atmospheric properties between the surface and an altitude of 60-70 km (troposphere and stratosphere). To study the properties of clouds, aerosols, and gases of importance as well as temperature and density profiles.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Institute for Space & Terrestrial Science

Environment Canada, Atmospheric Environment

$2 500 000
**START/*DÉBUT***: *1988 01* ***END/FIN***: *1992 12*

## 0205-7

Cheng, L
(403) 450-5260

Alberta Research Council; Resource Technologies Dept.

**A comparison of mesoscale scale deposition models as applied to northern Alberta and Saskatchewan**

To compare and evaluate the overall performance of three mesoscale acid deposition models (MESOPUFF II, RELMAP and SERTAD) with respect to their capability for northern Alberta and Saskatchewan.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$80 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 11*

## 0205-8

Chew, H
(306) 975-5744

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Radiation ice modelling**

Model the absorption of short-wave radiation by ice and how such absorption leads to internal melting and an increase in ice porosity. Develop a methodology for predicting changes in porosity and ultimately ice strength based on standard meteorological information.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0205-9

Davis, R
(604) 387-9931

British Columbia Ministry of Environment & Parks

**Cloud chemistry monitoring on Seymour Mountain, B.C.**

not available

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0205-10

Delorme, L
Harper, N
(416) 336-4788

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of climate on water quality of Canadian lakes**

To evaluate the relationship between climate and water quality and certain organisms using proxy data, by: characterizing fossil ostracodes found in shallow lakes; interpreting chemical, physical and climate variables of shallow lakes from ostracodes; further understanding the use of ostracodes as paleolimnological and paleoclimatic indicators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$500 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1993 03*

## 0205-11

Demuth, M
(306) 975-5754

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Coastal mountain glaciers**

Conduct glacier mass-balance surveys in the southern regions of the Coastal Mountains. To expand the database availability such that models linking climatic variability with glacier response may be refined and the processes, intrinsic to that link, better understood.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

## 0205-12

den Hartog, G
Neumann, H
(416) 739-4860

Environment Canada; Atmospheric Environment Service; Air Quality &Inter-Environmental Research Branch

**Dry deposition - forests**

To measure atmospheric fluxes of gaseous and particulate pollutants to forests and to parametrize deposition rates to provide inputs to pollution transport and deposition model.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Fu nds

Environment Canada, Atmospheric Environment

$487 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-13

Desautels, G
(514) 283-1601

Environment Canada; Atmospheric Environment Service; Quebec Region

**Ozone episode in Quebec**

Identify weather conditions and sources regions associated with strong ozone episode in Quebec.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$27 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-14

Fogarasi, S
(306) 975-5758
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Proxy climate data from ice cores**

To determine the nature of palaeo-atmospheric processes on a scale of seasons to centuries with emphasis on climatic change, and place the results in a hydrological context.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0205-15

Gillespie, T
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Measurement and estimation of crop microclimates for pest management**

To allow meteorological information to be used for optimum scheduling of pest control measures. Since these measures often involve the use of pesticides, maximizing their effectiveness with minimum wage through wise scheduling can enhance environmental quality.

Financing/*Financement:* Ontario Ministry of Agriculture and Food

$27 000

**START/*DÉBUT*:** *1987 04*

## 0205-16

Goodison, B
(416) 739-4345
Environment Canada; Atmospheric Environment Service; Canadian Climate Centre

**Snowmelt acidic shock**

To develop and validate an acidic snowmelt shock model. Climate finds on frequency and type of melt event to be used.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

$16 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0205-17

Holdsworth, G
(306) 975-5755
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mount Logan ice cores**

Determine the nature of palaeoatmospheric processes on a scale of centuries with emphasis on climatic change and atmospheric chemistry and place the results in the context of hydrology and atmospheric chemistry. To field test the modified ice core drill. To continue analyzing data (and further core) from the 1980 core.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0205-18

Holdsworth, G
(306) 975-5755
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Peyto Glacier, Alberta**

Determine the mass balance of Peyto Glacier as a contribution to the World Glacier Monitoring Service and for the improvement of our knowledge about glacier hydrology and hydrometeorology.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0205-19

Hopke, P
(315) 268-6469
Clarkson University; Dept. of Chemistry

**Development of multivariate analysis procedures for Ontario air quality data**

To complete the development of three-mode factor analysis to provide simultaneous temporal-spatial analysis of multisite air quality data. To compare the use of the Potential Source Contribution Function (PSCF) for source identification of the acidic components of collected airborne particle samples with the results previously obtained for acidic precipitation. To examine the use of unsupervised pattern recognition methods as well as several other eigenvector methods to identify the interrelationships between the particle or precipitation composition variables and their relationship to the meteorological regimes that existed when the samples were taken.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$59 200

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1992 04*

## 0205-20

King, K
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Determining the CO2 exchange between the atmosphere and a large forest area**

To determine the exchange of carbon dioxide between the atmosphere and extensive areas of agric. crops and forest using the Bowen ration and computer simulation approaches.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0205-21

Klemes, V
(306) 975-5756

National Hydrology Research Institute; Environment Canada

**GEWEX, IHP, world climate program**

To promote and participate in the advancement of hydrology on the international scene.

Financing/*Financement:* Environment Canada, Conservation & Protection

## 0205-22

Klemes, V
(306) 975-5756

National Hydrology Research Institute; Environment Canada

**Hydrological application of cumulative processes**

To provide a theoretical basis for interpretation of nonlinear rainfall/run-off relations based on time-averaged data.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1985* ***END/FIN***: *1989*

## 0205-23

Kochtubajda, B
(403) 450-5259

Alberta Research Council; Resource Technologies Dept.

**Summertime cumulus cloud seeding experiments in Alberta**

To examine the potential of rain augmentation through cloud seeding on small isolated towering cumulus clouds. Physical experiment emphasized in-situ aircraft measurements coupled with ground-based radar observations to investigate artificially modified precipitation processes. Draft report.

Financing/*Financement:* Alberta Research Council

Alberta Agriculture

Environment Canada, Atmospheric Environment

## 0205-24

Kozak, J
Moores, W
(902) 426-6132

Environment Canada; Conservation & Protection

**New Brunswick - Nova Scotia oxidants study update**

To update a previous study (1983) on oxidant levels in this region, and to determine the course of elevated oxidant levels through back trajectories. Final report completed March 1988.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

$40 000

**START/*DÉBUT***: *1987 12* ***END/FIN***: *1988 03*

## 0205-25

Leahy, D
(403) 291-1313

Western Research and Development

**Studies of diffusion climatology in the Mazeppa area of Alberta**

Evaluation of local turbulence climatology to better assess plume diffusion from proposed sulphur recovery plant stack.

Financing/*Financement:* Canadian Occidental Petroleum Ltd

## 0205-26

Letreman, J
(403) 743-6687

Suncor, OSG

**Supplementary emission control**

Develop a meteorologically controlled emission control method.

Financing/*Financement:* Suncor Inc.

## 0205-27

Lewis, J
(514) 398-4347

Université McGill; Département de géographie

**Analyse et simulation des fluctuations climatiques.**

To study the following climatic phenomena: blocage atmosphérique; tropical-midlatitude interactions; atmosphere-cryosphere coupling; isopycnal mixing in the ocean; interannual variability of the north Atlantic.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$87 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1990 05*

## 0205-28

Lewis, J
(514) 398-4347

Université Mc Gill; Département de géographie

**Surface energy exchange and land surface climatology in northern Baffin Bay**

The general aim of this project is to develop and examine ways to understand the terrestrial surface and its interaction with the air above it. Techniques to measure phenomena related to energy exchange across the surface-to-air interface include the use of electro-optical scanners in satellite and aircraft platforms. Techniques to replicate the phenomena by means of numerical computer simulation using the mathematical models of the processes involved, extend the analyses into the realm of non-radiative transfers. The spacial distributions of the energy exchange phenomena observed by remote sensing show the effects of different types of land surfaces. The numerical simulation gives insight into the causes of the diversity of the distributions.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$44 400
**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 03*

## 0205-29

Lovejoy, S
(514) 398-6537
Université McGill; Département de physique

**Analyse multifractale des données de pluie climatologique. L'invariance d'échelle, télédection et multifractales. Transfert radiatif en nuages factales.**

Ces projets ont comme but d'étudier les effets de la variabilité extrême de plusieurs champs atmosphériques sur les mesures et prévisions de ces champs. On met au point différentes méthodes d'analyse et de modélisations. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
Canada, ministère de l'Environnnment
Fonds pour la formation des chercheurs et l'aide à la recherche
$73 000

## 0205-30

Magill, B
(403) 427-3943
Alberta Environment

**Feasibility of a Climate Service Centre**

To assess the need for a climate service centre, the feasability of operating a service centre in Alberta, the resources needed to operate a service centre, and the type of centre which would be required.

Financing/*Financement:* Alberta Environment
$20 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 08*

## 0205-31

Mickle, R
Lo, A
(416) 739-4851
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Pesticide off target drift**

To evaluate spray drift model and develop instrument for spray cloud mapping.

Financing/*Financement:* Industry
$20 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-32

Nicholaichuk, W
(306) 975-5748
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Prairie evaporation study**

Initiate study of evaporation from open-water surfaces on the Prairies by obtaining accurate field data that will: compare the results from existing evaporation models and develop a standard for evaporation measurement and information to develop a more accurate hydrological model.

Financing/*Financement:* Environment Canada, Conservation & Protection
**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0205-33

Nicholaichuk, W
(306) 975-5748
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Evaluation of the CRAE model for evaporation and evaportranspiration**

Based on the in-depth critical review of the CRAE model, revise the theory of the CRAE model to improve the radiation component of the model and introduce a wind function.

Financing/*Financement:* Environment Canada, Conservation & Protection
**START/*DÉBUT***: *1987* ***END/FIN***: *1990*

## 0205-34

Olson, M
(416) 739-4870
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Lagrangian model**

To use the Lagrangian model to compute trajectories, and sulphur dioxide and sulphate concentrations. Also used to investigate transboundary sulphur fluxes between USA and Canada as well as budgets and source-receptor relationships.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds
Environment Canada, Atmospheric Environment
$145 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-35

Prowse, T
(306) 975-5737
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snowmelt run-off in permafrost wetlands**

Establish physical processes controlling snowmelt/run-off from permafrost wetlands (muskeg). Develop suitable hydrological models for this environment. Quantify major changes occurring in this hydrological regime as a result of climate change.

Financing/*Financement:* Environment Canada, Conservation & Protection
**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0205-36

Puckett, K
(416) 739-4836

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Eulerian model development**

Inter agency project to develop an acidic deposition and oxidant model (ADOM) using Eulerian approach. Final version of the model to be developed in 87-88 and field evaluation will take place in 88-89.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1983* **END/*FIN***: *1991*

## 0205-37

Robertson, E
(613) 584-3311

Chalk River Nuclear Laboratories

**Testing atmospheric dispersion model performance and developing codes to include deposition into the model**

To subject the regulatory Model 308 to the same validation tests using the monitoring data from Sudbury as were applied to the Chalk River dispersion model. If the required meteorological imput data to run the Model 308 is available, to use the monitoring data at Chalk River to also validate the model. To add to the Chalk River dispersion code appropriate routines to predict longterm mean dry deposition and wash out to plume constitutents from the Sudbury stacks. To use all relevant and available monitoring data from the Sudbury area to validate or otherwise extend the model.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$22 000

**START/*DÉBUT***: *1989 08* **END/*FIN***: *1990 07*

## 0205-38

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant modelling of Little Turkey Lakes and Lake Ontario**

To complete hydrological modelling of Little Turkey Lakes for application to toxic mass balance models. Preliminary testing of existing toxic exchange models to Little Turkey Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$100 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1993 03*

## 0205-39

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling climate variations of air-water interactions**

To collate hydrometeorological/limnological data (1984-1989) to extend existing long term climate data base for Lake Erie and Lake Ontario and to compute surface energy balances and turbulent exchanges. To analyse NWRI surveillance data (1966-present) on the lower Great Lakes to derive basin wide vertical temperature profiles and accurate heat storage estimates for model verification and detection of climate change in lake thermal characteristics. To finalize report on water quality, seston, sediment chemistry and hydrology on Lake St. Clair. This study forms part of the NWRI commitment to the Canada Climate Program.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$400 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1996 04*

## 0205-40

Shewchuk, S
(306) 933-5437

Saskatchewan Research Council

**Atmospheric sciences contract research**

Research in the areas of air pollution, acid rain, climatology, organic vapours in the atmosphere; to evaluate the effects of man on the atmospheric environment.

Financing/*Financement:* Environment Canada, Atmospheric Environment

Saskatchewan Environment and Public Safety

Private sector

$550 000

## 0205-41

Srivastava, B
(416) 973-5820

Environment Canada; Atmospheric Environment Service

**Optimization of fungicide use on field tomatoes using standard meteorological data**

To develop spraying schedules for fungicides in field tomatoes in Ontario from on-site and remote meteorological data. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$18 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0205-42

Stanley-Jones, M
(403) 450-5278

Alberta Research Council

**Climate data loggers (battery operation remote locations -65 degrees C conditions)**

Development, production and construction of 38 climate data loggers to record temperature (4), precipitation (1), and wind speed (1) at each site installation. System developed in consortium with private industry. Report - Climate Data Loggers, Field Manual.

Financing/*Financement:* Alberta Forestry Lands & Wildlife

$110 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0205-43

Steyn, D
(604) 228-6407
University of British Columbia
**Observation and modelling of mesoscale atmospheric flows**
none available
Financing/*Financement:* National Science & Engineering Research Council

## 0205-44

Sullivan, P
Yip, H
(519) 679-2111
University of Western Ontario; Applied Mathematics Dept.
**Atmospheric dispersion of vapours**
To model the turbulent dispersion of the vapours resulting from the instantaneous (explosive) release of volatile liquids into the atmosphere in order to assess the hazards posed by such released to general population centres within a radius of 50 km of the release point.
Financing/*Financement:* Department of National Defence Canada
Natural Sciences & Engineering Research Council
$99 874
**START/*DÉBUT***: *1989 03* ***END/FIN***: *1989 09*

## 0205-45

Trivett, N
(416) 739-4447
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**Carbon dioxide flux studies**
To study CO2 exchange between forest and atmosphere during the growing season. Flux measurement made from main tower at Borden or with equipped Twin Otter.
Financing/*Financement:* Environment Canada, Atmospheric Environment
$45 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-46

Villeneuve, J
(418) 654-2532
Université du Québec; INRS-eau
**Interprétation et représentation de la distribution spatiale et temporelle des dépôts acidifiants en utilisant la géostatistique.**
Interprétation et représentation de la distribution spatio-temporelle des dépôts acidifiants en utilisant la géostatistique. Permettre de prédire l'apport ou la perte de précision que causerait l'ajout, l'élimination ou le déplacement d'un ou plusieurs sites d'échantillonnage.
Financing/*Financement:* Québec, ministère de l'Environnement
$53 750
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 08*

## 0205-47

Voldner, E
(416) 739-4670
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**Atmospheric loading**
To investigate the pathway of selected toxic chemicals, and to estimate concentrations in air and precipitation and net atmospheric input of these chemicals for regions in North America.
Financing/*Financement:* Great Lakes Water Quality
Long Range Transport of Airborne Pollutants Program Funds
$150 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0205-48

Wardle, D
(416) 739-4632
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**Solar energy research**
Conduct research on solar radiation, build irradiance data bases and apply knowledge gained to facilitate the utilization of solar energy resources.
Financing/*Financement:* Panel on Energy Research and Development
**START/*DÉBUT***: *1977 04* ***END/FIN***: *ongoing*

## 0205-49

Wardle, D
(416) 739-4632
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**RAGS observatory**
To conduct long-term operation of an early warning system for climatic change. Radiation changes in 10-12 micron should precede any climatic warming by several decades.
Financing/*Financement:* Panel on Energy Research and Development
$150 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

## 0205-50

Wardle, D
(416) 739-4632
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**Atmospheric radiation research**

Conduct research on atmospheric radiation, operate National Atmospheric Radiation Centre (NARC), develop and test UVB monitoring technology and apply knowledge to environmental problems like climate change.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1960 04* **END/*FIN*:** *ongoing*

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## 0205-51

Wong, R
Cheng, L
(403) 450-5111

Alberta Research Council; Resource Technologies Dept.

**Towards a strategy for adapting to climate change in Alberta**

To identify and assess the implications of available global climate change predictions for Alberta. To assess the detectability of climate change and variability in Alberta. To specify user needs and concerns. A final report will be produced at completion of project.

Financing/*Financement:* Alberta Research Council

Alberta Environment

Alberta Forestry Lands & Wildlife

Alberta Agriculture

Alberta Technology Research & Telecommunications

$70 000

**START/*DÉBUT*:** *1989 01* **END/*FIN*:** *1989 06*

# GASEOUS AND PARTICULATE EMISSIONS

# *ÉMISSIONS GAZEUSES ET PARTICULAIRES*

## 0206-1

Alp, E
(416) 630-6331
Concord Scientific Corp.

**Modelling higher moments of the concentration probability distribution (concentration fluctuations)**

Development of a state-of-the-art model for estimating concentration fluctuation (second moment).

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$70 000

**START/*DÉBUT***: *1989 08* ***END/FIN***: *1992 07*

## 0206-2

Au, L
(416) 235-6000
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Method development for VOST & VOL**

To develop an analytical method for VOST samples.

Financing/*Financement:* Ontario Ministry of Environment

$62 000

**START/*DÉBUT***: *1989 01* ***END/FIN***: *1990 06*

## 0206-3

Barrie, L
(416) 739-4868
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Aerosol chemistry**

To investigate the chemical compounds that dominate the mass of resperable light scattering aerosol. To investigate usefulness of lead isotope ratios as indicator of lead origin.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$15 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0206-4

Beckett, P
(705) 675-1151
Laurentian University; Biology

**Effects of contaminants on mosses and lichens**

Detection of short and long-term changes in the moss and lichen flora of NE Ontario ecosystems as affected by contaminants. Effects of metals on moss and lichen physiology. Report available.

Financing/*Financement:* Laurentian University Research Fund

$7 000

**START/*DÉBUT***: *1979*

## 0206-5

Blackwell, B
not yet known
Sandwell Swan Wooster Inc.

**Improved gas mixing in kraft recovery boilers**

Improved gas mixing in kraft recovery boilers for increased energy efficiency, reduced TRS emissions and increased capacity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Industry (eight from pulp and paper sector)

$45 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 02*

## 0206-6

Blakeman, W
(819) 953-1105
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental protection criteria - coal mining preparation (PERD project 24201)**

To identify sources of wastes, identify and quantify contaminants and identify and assess in place and potentially emerging pollution abatement technologies at Canadian coal mining and preparation facilities, with respect to liquid effluents, particulate and gaseous air emissions and the management of solid wastes.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$792 500

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1990 03*

## 0206-7

Blakeman, W
Paine, P
(819) 953-1105
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of status and environmental implications of emerging advanced coal cleaning technologies**

To identify emerging advanced physical, chemical and biological coal cleaning technologies in U.S., Canada and world wide. To identify and assess their commercialization potential and the environmental implications of the processes themselves vis à vis their effectiveness in reducing SO2 emissions from U.S. and Canadian combustion sources.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Conservation and Protection

$200 000

**START/*DÉBUT***: *1986 12* **END/FIN**: *1991 06*

## 0206-8

Blanchette, J
(514) 773-2521

MAPAQ; Service de recherche en phytotechnie de Saint-Hyacinthe

**L'utilisation de la mousse de tourbe pour la gestion des odeurs et la conservation de la valeur fertilisante du lisier de porc.**

Atténuer le dégagement d'odeurs pendant l'entreposage et à l'épandage d'au moins 90%. Evaluer l'avantage économique de la conservation d'azote en fonction de l'épaisseur de tourbe ajoutée et de la quantité de la mousse de tourbe utilisée.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$94 620

**START/*DÉBUT***: *1987 12* **END/FIN**: *1990 12*

## 0206-9

Boomer, D
(416) 235-5858

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Tracer Studies Using ICP/MS Isotope Ratios: Air Particulate**

To investigate the feasibility of using isotope ratios to identify and discriminate various sources of pollution.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$58 000

**START/*DÉBUT***: *1986 04*

## 0206-10

Bouchard, M
(418) 650-1550

Centre de recherche industriel du Québec

**Réduction des émissions de solvants organiques volatils (SOV) dans l'industrie québécoise du meuble.**

A partir d'une revue exhaustive de la littérature, analyser et évaluer des solutions permettant de réduire les émissions de SOV. Identifier les techniques novatrices de traitement des émissions économiquement applicables à cette industrie, considérer des techniques de performance moyenne qui, seules ou combinées pourraient permettre à certaines usines de respecter les normes établies et rechercher des techniques de réduction des quantités d'air évacué ou des concentrations des SOV qui y sont présents.

Financing/*Financement:* Québec, ministère de l'Environnement

Québec, ministère de l'Industrie, du Commerce et de la Technologie

Association des fabricants de meubles du Québec

$53 620

**START/*DÉBUT***: *1989 08* **END/FIN**: *1990 02*

## 0206-11

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**PCB sampling and analysis procedures**

To develop analytical methods for measurement of PCBs in oils, soils, ambient air and stack emissions. Recommended procedures for: oil available Dec. 1987 (revised April 1989), soil available July 1988 (revised April 1989), ambient and source emissions available April 1989. Revisions will continue to be ongoing.

Financing/*Financement:* Environment Canada, Conservation and Protection

$120 000

**START/*DÉBUT***: *1984 00* **END/FIN**: *1989 00*

## 0206-12

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Method development to determine organic and inorganic compounds in environmental samples**

To develop analytical methods for semi-volatile organic compounds in ambient air and source emission samples and for multi-elemental analysis of dichotomous filter samples. Procedures will form part of in-house analytical methods manual.

Financing/*Financement:* Environment Canada, Conservation and Protection

National Incinerator Testing and Evaluation Program

$400 000

**START/*DÉBUT***: *1983* **END/FIN**: *ongoing*

## 0206-13

Caton, R
(416) 630-6331

Concord Scientific Corporation

**High Temperature Photochemical Kinetics of SO2 and NO's for a Flue Gas Treatment Process**

1. To measure the rates and quantum yields (photon efficiencies) for the UV photochemical oxidation of SO2 and NO's in gas mixtures simulating the composition and operating temperature of coal-fired thermal power plant flue gases. 2. To assess the feasibility of the process for larger-scale applications, taking into account lamp characteristics for available equipment and projected costs. 3. To verify the

predictive capability of a computerized model of the oxidation process.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$170 900

**START/*DÉBUT*:** *1986 09* **END/*FIN*:** *1987 12*

## 0206-14

Cegelski, M
(514) 672-8200

Beltron Inc.

**Logiciel pour inventaire des polluants atmospheriques**

Développer un nouveau logiciel pour la gestion des données d'inventaire des polluants atmospheriques du Québec. Generer un nouveau systeme la gestion l'archivage, et le traitement des données. Travail terminé - rapport disponible.

Financing/*Financement:* Environnement Canada, Conservation et protection

$15 000

**START/*DÉBUT*:** *1987 09* **END/*FIN*:** *1988 03*

## 0206-15

Chapman, R
Sage, M
(416) 965-4081

Ontario Ministry of Environment; Air Resources Branch

**Analysis of volatile organics in air**

Positive identification and quantification of trace organic compounds (polar and non polar) in the range of C2 - C12 in air. Sampling, standards, analysis etc.

Financing/*Financement:* Ontario Ministry of Environment

$1 050 000

## 0206-16

Davis, A
(516) 398-6489

Université Mc Gill; Département de physique

**Evaluation des erreurs systématiques en télédétection des aérosols reliées au traitement du transfert radiatif à travers l'atmosphère.**

Quantifier la validité (ou invalidité) d'une méthodologie de télédétection passive des aérosols troposphériques, en étudiant tour à tour les limites de l'équation du transfert radiatif, les effets de l'hétérogénéité spatiale, de la résolution spectrale finie, du choix de modèle approximatif de transfert, et des effets de la paramétrisation de la nature (inconnue) des aérosols étudiés.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Centre d'applications et de recherches en télédétection, Sherbrooke

$11 600

## 0206-17

Davis, C
(416) 630-6331

Concord Scientific Corp.

**Recommended regulatory options for wood fired systems**

To produce a database to serve as a basis for development of guidelines and regulations for wood fired systems exceeding 1 million Btu/hour.

Financing/*Financement:* Environment Canada, Conservation & Protection

$24 960

**START/*DÉBUT*:** *1989 08* **END/*FIN*:** *1990 03*

## 0206-18

de Lasa, H
Lee, S
(519) 661-2144

University of Western Ontario; Chemical Reactor Engineering Centre; Faculty of Engineering

**Two phase flow model for simulation of an industrial fluidized bed boiler**

To develop the model equations for a fluidized combustion boiler. The model equations are being incorporated in a simulator of a power station in which the central unit is a fluidized bed boiler (available with permission of SACDA).

Financing/*Financement:* SACDA Inc.

$3 000

**START/*DÉBUT*:** *1989 05* **END/*FIN*:** *1989 06*

## 0206-19

De Souza, E
Katsabanis, P
(613) 545-2230

Queen's University; Mining Engineering

**Model to predict toxic fumes from explosives and dilution ventilation**

none available

Financing/*Financement:* Energy Mines & Resources Canada

$15 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0206-20

DeBrou, G
(416) 965-4081

Ontario Ministry of Environment; Air Resources Branch

**TAGA 3000 and 6000**

To develop methods of monitoring trace organics in air, soil, etc. by CI/MS; CI/MS/MS; GC/CI MS/MS, etc.

Financing/*Financement:* Ontario Ministry of Environment

$1 350 000

## 0206-21

Diamond, G
(416) 965-4081

Ontario Ministry of Environment; Air Resources Branch

**Method development for PAH's in ambient air**

To develop a method for accurate sampling of airborne PAH compounds on a routine basis.

Financing/*Financement:* Ontario Ministry of Environment

$30 000

**START/*DÉBUT***: *1986 03*

## 0206-22

Dibbs, H
(819) 953-1187

Environment Canada; Conservation and Protection; Technology Development Branch

**Performance monitoring of the Swan Hills Hazardous Waste Incinerator using surrogate compounds**

To investigate the use of sulphur hexafluoride and a chlorinated fluorocarbon to provide a continuous, reliable and economical means of determining the destruction efficiency of the Swan Hills incinerator. Final report available, March 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

Alberta Environment

Alberta Special Waste Management Corporation

British Columbia Ministry of Environment and Parks

$125 000

**START/*DÉBUT***: *1988 03* **END/FIN**: *1988 09*

## 0206-23

Donelan, M
(416) 336-4879

Research and Applications Branch; National Water Research Institute; Environment Canada

**Transfer of toxic gases**

To establish the dependence of the transfer of gases at the air-water interface on the descriptions of the interface. Report by Donelan and Merzi, 1987 - Gas Transfer at Air-Water Interfaces, NWRI contribution 87-157.

Financing/*Financement:* Environment Canada, Conservation and Protection

$41 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 04*

## 0206-24

Drake, J
(416) 525-9140

Geography Department; McMaster University

**Identification of long-range aerosol sources at the Dorset Environmental Station**

To employ various methods in medium and high flux Neutron Activation Analysis to help elucidate regional sources of air pollution.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$74 400

**START/*DÉBUT***: *1987 03* **END/FIN**: *1990 02*

## 0206-25

Dufresne, P
(514) 866-2601

Hydrogeo Canada Inc.

**Développement d'un biofiltre pour contrôler les émissions industrielles dans l'air de solvants organiques volatils**

Rechercher un moyen économique de réduire les émissions atmosphériques de SOV provenant d'imprimeries. Les SOV sont précurseurs d'ozone troposphérique. Rapport final, septembre 1989.

Financing/*Financement:* Ministère des approvisionnements et services

Environnement Canada, Conservation et protection

$65 159

**START/*DÉBUT***: *1989 02* **END/FIN**: *1989 09*

## 0206-26

Dumontier, M-A
(514) 866-4451

Pâques-Lavalin Environnement

**Inventaire des sources d'hydrocarbures aromatiques polycycliques au Québec**

Evaluer les rejets des sources d'HAP au Québec, identifier les secteurs industriels predominants et les technologie applicables au contrôle de ces sources. Identifier les besoins en R&D, rapport final août 1988.

Financing/*Financement:* Environnement Canada, Conservation et protection

$49 000

**START/*DÉBUT***: *1988 01* **END/FIN**: *1988 08*

## 0206-27

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Ozone research**

Conduct research on stratospheric ozone layer, operate ozone monitoring network and apply knowledge to environmental problem of depletion of the ozone layer.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1975 04* **END/FIN**: *ongoing*

## 0206-28

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Investigate the effects of minor constituents on pollution of the stratosphere**

To conduct research on the basic physical processes of the stratosphere emphasizing ozone photochemistry. Apply knowledge to environmental problems.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1974 04* **END/FIN:** *ongoing*

## 0206-29

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Monitoring of the protective ozone layer (MOPOL)**

Research the basic physical processes of the stratosphere with emphasis on ozone photochemistry as pertains to the environmental problem of stratospheric pollution.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1983 04* **END/FIN:** *ongoing*

## 0206-30

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Space shuttle flights of the SPEAM and BEAM (Sunphotometer and Brewer Ozone Spectrophotometer)**

Monitor environment from space researching the basic physical processes of the stratospheric, emphasizing ozone photochemistry. Apply this knowledge to environmental problems.

Financing/*Financement:* Industry Science and Technology Canada

**START/*DÉBUT*:** *1984 04* **END/FIN:** *ongoing*

## 0206-31

Feddes, J
(403) 492-4251

University of Alberta; Agricultural Engineering

**A study of air quality in commercial turkey rearing facilities**

To quantify rates of production of aerial contaminants (NH3, CO2, dust, water vapour) within commercial rearing facilities in Alberta during a bird cycle. Final report will be available.

Financing/*Financement:* Alberta Research Council

$32 000

**START/*DÉBUT*:** *1987 12* **END/FIN:** *1988 06*

## 0206-32

Fernbach, E
Guerriere, R
(416) 979-5042

Office of Research & Innovation; Ryerson Polytechnical Institute

**Energy conversion lab testing**

Provision of testing facilities and support staff for the testing of a catalytic woodburning furnace.

Financing/*Financement:* Industry

$18 000

**START/*DÉBUT*:** *1987 01*

## 0206-33

Gignac, L
(403) 492-5516

Botany Department; University of Alberta

**Ecological tolerances and niche structure of Sphagnum along climatic and pollution gradients**

To determine the accumulation and the effects of reduced sulphur and heavy metal deposition on several Sphagnum species. These pollutants were emitted by mining and smelting operations in the Sudbury, Ontario area and a pulp and paper mill in the Prince Rupert, B.C. area. (This report may be obtained from the CEARC).

Financing/*Financement:* Canadian Environmental Assessment Research Council

$5 000

**START/*DÉBUT*:** *1985 05* **END/FIN:** *1986 03*

## 0206-34

Glooschenko, W
(416) 336-4786

Lakes Research Branch; National Water Research Institute; Environment Canada

**Role of northern wetlands in global climatic change**

To study the role of northern wetlands in global climatic change and geochemical cycles with emphasis upon the carbon cycle, especially methane.

Financing/*Financement:* Environment Canada, Conservation and Protection

Natural Sciences & Engineering Research Council

$900 000

**START/*DÉBUT*:** *1988 09* **END/FIN:** *1992 09*

## 0206-35

Glooschenko, W
(416) 336-4786

Lakes Research Branch; National Water Research Institute; Environment Canada

**Atmospheric deposition of contaminants in the Upper Great Lakes**

To determine the feasibility of using vegetation and peat as a biomonitor of atmospheric deposition of organochlorine and metal contaminants in the Lake Superior area and remote northern Canadian sites.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0206-36

Goodwin, L
Dieken, F
(403) 632-6761

Alberta Environmental Centre

**Determination of sulfide and other reduced sulfur compounds in biosamples**

To investigate sulfide residues in poisoned tissues and blood for postmortem, neurological and toxicological purposes. To study the metabolism and fate of sulfide in biological systems after subacute and acute exposures to hydrogen sulfide.

Financing/*Financement*: Alberta Environmental Centre

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1990 01*

## 0206-37

Hallman, E
(705) 675-1151

Laurentian University; Physics/Astronomy

**The lifetimes and pathways of the diesel particulate and the PAHs in dieselized underground mines**

To examine the relationship between diesel particulates and the polycyclic aromatic hydrocarbon content of diesel exhaust in an underground mine environment. Report is available.

Financing/*Financement*: Centre in Mining and Mineral Exploration

Falconbridge Nickel Mine Ltd.

$107 400

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1987 07*

## 0206-38

Hamaliuk, G
(416) 624-5700

Domtar Inc.

**Development of a hydrocarbon vapour collection and destruction system**

1) To reduce emissions of volatile hydrocarbons from coal tar pitch storage tanks; 2) To conserve energy by burning collected hydrocarbons in an existing boiler; 3) To determine the operational efficiency of the collection/destruction systems and its operability during cold weather. Final report under review.

Financing/*Financement*: Panel on Energy Research and Development

Domtar Inc.

$395 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1988 03*

## 0206-39

Havlena, J
(403) 220-7418

University of Calgary; Department of Chemical & Petroleum Engineering

**(2) AP - Monitoring technology. Remote sensing of gaseous pollutants from sour gas plant emissions**

Development of commercial instrumentation based on densitometric evaluation of monochromatic sour gas plume photography for quantitative monitoring of atmospheric dispersion of $NO_2$ and $SO_2$.

Financing/*Financement*: University of Calgary

## 0206-40

Hay, D
(819) 953-1109

Environment Canada; Conservation & Protection; Industrial Programs Branch

**National Incinerator Testing and Evaluation Program (NITEP)**

Evaluation of energy from waste combustion and emission control technologies from an energy and environmental perspective. Development of guidelines.

Financing/*Financement*: Environment Canada, Conservation and Protection

Energy, Mines and Resources Canada

Department of Supply and Services Canada

Communité urbaine de Québec

United States Environmental Protection Agency

$9 500 000

**START/*DÉBUT***: *1983 11* **END/*FIN***: *1990 11*

## 0206-41

Heddle, J
(416) 667-3053

Department of Biology; York University

**Mutagenicity of Complex Mixtures of Polycyclic Aromatic Hydrocarbons in Ambient Air Particulates**

To study mutagenic and carcinogenic potential of polyaromatic hydrocarbons in ambient air particulate matter and to determine the hazard and mutagenic risk of their mixture.

Financing/*Financement*: Ontario Ministry of the Environment, Research Advisory Committee

$207 600

**START/*DÉBUT***: *1985 10* **END/*FIN***: *1987 09*

## 0206-42

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Laboratory

**The effects of alcohol fuels (85% methanol) on vehicle catalysts at ambient conditions**

To determine the effects on a vehicle catalyst when the vehicle is fuelled with high blend methanol by evaluating the alcohol and aldehyde/ketone emissions at ambient temperature conditions. Testing includes emission sampling with and without a catalyst and the determination of the catalyst light-off points. Final reports available from V. Battista.

Financing/*Financement*: Environment Canada, Conservation and Protection

Department of Transport Canada

$13 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1987 10*

## 0206-43

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaporative emission from test fleet of methanol fuelled vehicles during the life span of vehicles**

To determine the deterioration effects of methanol on a vehicle's evaporative emission system, and to evaluate the evaporative emission levels on vehicles as they deteriorate through normal mileage accumulation. Final reports available from V. Battista.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada

$10 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1989 11*

## 0206-44

Hendren, F
Barton, P
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluate volatile organic compounds (VOC) emission levels from vehicles operating in cold weather conditions**

To determine the levels of VOC emitted from the Canadian light duty passenger car fleet for inventory purposes.

Financing/*Financement:* Environment Canada, Conservation & Protection

$30 000

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1990 04*

## 0206-45

Hendren, F
Howes, P
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Low blend alcohol fuels exhaust and evaporative emissions at ambient temperatures**

To determine the levels of alcohol and aldehyde/ketone emissions from vehicles fuelled with low blend alcohol fuels (5% methanol and 10% ethanol) with various co-solvents and reid vapour pressures tested at standard and ambient temperatures. Vehicle testing to be conducted on both light duty and light/heavy duty vehicles. Interim and final reports will be available from C. Wachmann, Industrial Programs Branch, DOE - C&P, (819) 953-1140.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 07*

## 0206-46

Hendren, F
Ostrouchov, N
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Ambient temperature testing of three-way catalyst equipped vehicles**

To determine the effects of ambient temperature (-25 C to 25 C) on exhaust emissions from vehicles equipped with three-way catalysts tested under both city and highway conditions. Final report will be available from Dr. N. Ostrouchov.

Financing/*Financement:* Environment Canada, Conservation and Protection

$20 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 05*

## 0206-47

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Non-regulated vehicle exhaust emission evaluation at ambient temperatures**

To evaluate the emission levels of non-regulated toxic emissions from light duty passenger vehicles tested in ambient conditions. The project includes developing procedures and instrumentation for implementation at the facility after reviewing existing studies. The non-regulated emissions to be investigated will include: benzene, sulfur, dioxins, aldehydes and others.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *ongoing*

## 0206-48

Irwin, P
(519) 823-1311

Rowan, Williams, Davis and Irwin Inc.

**An Evaluation of the Problems of Particulate Emissions from the Wood Products Industry**

Evaluating the problem of airborne particulate matter resulting from the wind erosion of wood particles such as shavings, sawdust, and chips from storage/waste piles. Determining solutions aimed at reducing wind erosion in order to ensure compliance with Regulation 308.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$33 100

**START/*DÉBUT***: *1987 12* ***END/FIN***: *1990 07*

## 0206-49

Jervis, R
(416) 978-3071

University of Toronto; Dept. of Chemical Engineering

**Determination of source-receptor links by size-specific multielemental inorganic component determination and modelling**

To do sufficient repeat sampling at selected locations & analyze for 20-25 trace elements to permit source profiles to be established and receptor modelling to be performed. If particle size-sorting is necessary, it is particularly important for analytical methods to be sensitive in the microgram range and lower for each filter and fraction. Output: Masters Theses: Zhijun, Kang, 1988. A study of aerosol characterization & source apportionment at Ontario sites using receptor modelling. Chan, Albert C., 1989. The assessment of ambient particulates by multielement radioanalytical & receptor modelling techniques. Report: Jervis, Kang & Chan. Multicomponent factor analysis of INAA, IPAA & XRF aerosol data for assessing the health significance of incinerator & industrial sources.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$93 300

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0206-50

Karasek, F
(519) 885-1211

Department of Chemistry; University of Waterloo

**Thermal Reactions of Polychlorinated Dibenzo-p-Dioxins on Flyash Particles, Incinerator Conditions**

Incinerator flyash will be placed in a heated flowtube. Nitrogen will be passed through the flyash to an impinger/florisil combination which will absorb any organic compounds volatilized from the flyash. Some suspected precursors of chlorinated dioxins and dibenzofurans will be introduced into the gas stream above the flyash. The flyash, flowtube, impinger and florisil will be analysed for dioxins and furans after each experiment. The temperature range of 100 C to 600 C will be investigated.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 05*

## 0206-51

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Characterization and control of malodorous emissions at oil/natural gas fields (PERD project 67229)**

Phase 1 - identify and characterize sources of odorous and dangerous air emissions in oil and gas fields, report completed. Phase 2 - develop a method manual to monitor and audit equipment performance in the field.

Financing/*Financement:* Panel on Energy Research and Development

$100 000

**START/*DÉBUT*:** *1984 08* **END/FIN:** *1988 08*

## 0206-52

Keffer, J
(416) 978-2181

University of Toronto

**Digital image analysis of particles in a turbulent wind**

To create a comprehensive data-base comprising particle-trajectory and turbulent wind statistics and to correlate these statistics via regression analysis. To develop and implement a random-flight Lagrangian model for predicting particle-trajectory statistics.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$140 200

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0206-53

King, K
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Determining the CO2 exchange between the atmosphere and a large forest area**

To determine the exchange of carbon dioxide between the atmosphere and extensive areas of agric. crops and forest using the Bowen ration and computer simulation approaches.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0206-54

Krull, U
(416) 828-5437

Department of Chemistry; Erindale College; University of Toronto

**An intrinsic chemically selective lipid-based wave guide organic vapour sensor**

To prepare and study a novel integral optical sensor consisting of a chemically selective flourescent lipid biomembrane which acts as a light guide. This system will be developed with the capability of being portable or remote, and will be able to provide sensitive long term detection of organic species of environmental significance.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$34 500

**START/*DÉBUT*:** *1987 02* **END/FIN:** *1990 01*

## 0206-55

Lawson, D
(306) 780-6462

Environment Canada; Conservation and Protection; Environmental Protection

**Radionuclides in vegetation**

Baseline study for assessing impact of uranium mining

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation and Protection

Saskatchewan Health Resources Board

Indian and Northern Affairs Canada

$195 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 03*

## 0206-56

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Ecosystem acidification and the trace element analysis of conifer wood**

To examine the trace element composition of pine wood using stepwise PIXE (Proton Induced X-Ray Emission Spectroscopy) to determine if a historical record of changing soil chemistry due to long term acidic deposition from a point source may be preserved in the wood.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$63 717

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1989 03*

## 0206-57

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Acidification in a temperate forest ecosystem and the role of sulphur gas emissions and sulphur dust**

To evaluate the effects of accelerated acidification on a temperate forest ecosystem exposed to sulphur dust emissions and long term low concentrations of sulphur gas emissions.

Financing/*Financement:* Whitecourt Environmental Study Group

$86 500

**START/*DÉBUT*:** *1981 05* **END/FIN:** *1988 03*

## 0206-58

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Nutrient redistribution in jack pine as an indication of acid deposition stress**

To determine the feasibility and applicability of using stepwise PIXE (Proton Induced X-ray Emission Spectroscopy) analysis to quantify nutrient redistribution in stressed and nonstressed jack pine trees in the Athabasca Oil Sands regions of Alberta.

Financing/*Financement:* Alberta Environment

$35 800

**START/*DÉBUT*:** *1983 10* **END/FIN:** *1988 03*

## 0206-59

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Long-term effects of low sulfur dioxide concentrations on alfalfa productivity**

1. To apportion the specific relative contributions of SHERCO Units 1 and 2 emissions to the sulfur content of crops and soils in the region; 2. To determine the relationships between any changes in crop and soil sulfur as attributable to point (1) and crop productivity; and 3. To develop numerical relationships between ambient SO2 concentrations and observed changes in crop productivity.

Financing/*Financement:* Northern States Power Company

**START/*DÉBUT*:** *1983 01* **END/FIN:** *1987 06*

## 0206-60

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**The effects of nitrogen oxides on native vegetation near compressor installations in Alberta**

The main overall objectives of this research project were to determine the sensitivity of selected plants species to injury by low concentrations of NO and/or NO2 and to determine whether selected plant species will acclimate to low concentrations of NO and/or NO2 stress.

Financing/*Financement:* Alberta Environment

$542 845

**START/*DÉBUT*:** *1980 04* **END/FIN:** *1985 03*

## 0206-61

Legge, A
(403) 220-5271

Kananaskis Centre for Environmental Research; University of Calgary

**Alberta Government/Industry. Acid deposition research program, biophysical aspects**

1. An initial assessment of the potential impact of acid-forming gases on Alberta's environment, including local & regional air quality assessments & agricultural crops & soil evaluation; 2. An inventory of sulphur oxide & nitrogen oxide emissions in Alberta; 3. A world literature review in the biological sciences on the effects of acid deposition on vegetation, soils & surface & ground waters, and then placing these in an Alberta context.

Financing/*Financement:* Alberta Environment

Canadian Petroleum Association

Energy Resources Conservation Board

Utilities Group, Alberta

$5 309 758

**START/*DÉBUT*:** *1985 02* **END/FIN:** *1988 07*

## 0206-62

Leung, P
(613) 991-9456

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Development of source measurement technology**

To develop new and update existing stack emissions measurement methods and evaluate commercially available monitors capable of measuring stack emissions on a real-time basis. To develop methods in support of CEPA regulations and guidelines.

Financing/*Financement:* Environment Canada, Conservation and Protection

$110 000

**START/*DÉBUT*:** *1988* **END/FIN:** *ongoing*

## 0206-63

Leung, P
(613) 991-9456

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Hazardous waste incineration technology development**

To develop thermal decomposition profiles for candidate chemicals for incineration.

Financing/*Financement:* Environment Canada, Conservation and Protection

$85 000

**START/*DÉBUT*:** *1987* **END/FIN:** *ongoing*

## 0206-64

Lo, K
(604) 228-4880

University of British Columbia

**Gas chromatographic automatic sampler and work station**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0206-65

Logan, D
(416) 736-2100

York University

**Mutagenicity studies and risk estimation of complex mixtures of organic airborne contaminants**

Test nine airborne mutagens in four mutagenicity assays. Measure toxicity singly and mutagenicity both singly and in defined combinations. Using these data, to develop a process by which one can predict the biological response to complex atmospheric mixtures of pollutants.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$100 000

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1990 12*

## 0206-66

Luniewski, R
(416) 235-6000

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for analysis of chlorophenols, PCBs, PAH, and CB in stack samples**

To develop a methodology that would be suitable for the organics CB/ PCB/PAH/CP, as well as dioxins. To develop a methodology that would minimize the dilution factors of each sample.

Financing/*Financement:* Ontario Ministry of Environment

$78 000

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 03*

## 0206-67

Macalla, D
(416) 525-9140

McMaster University; Dept. of Biochemistry

**Hamilton air: chemical compostion and genotoxic activity of respirable particulate and organic vapours**

To determine what levels of airborne mutagenicity can be detected on respirable particles in the Hamilton airshed as a function of season and meteorological conditions. Determine if a simple mammalian index of genotoxic hazard can be developed using a post labelling technique which permits the quantitation of DNA adducts formed with activatied carcinogens. Determine what chemical classes contribute to the mutagenicity of Hamilton air. Determine how total airborne mutagenicity is related to the air quality index.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$13 000

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1990 12*

## 0206-68

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**Air sampling methods for new anti-sapstain chemicals**

To develop sampling methods for ambient air and emissions for two new anti-sapstain chemicals introduced in forest products industry of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$60 000

**START/*DÉBUT*:** *1988 05* **END/FIN:** *1989 05*

## 0206-69

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**PCP incineration study in the pulp mills of B.C.**

To determine the emission characteristics and impact on air quality including dioxins when PCP-treated wood wastes

are incinerated in the power boilers. Report on the design and plan for the test burn is available.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

Environment Canada, Conservation and Protection

$225 000

**START/*DÉBUT*:** *1987 05*

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## 0206-70

Martin, R
(519) 679-2111

University of Western Ontario; Dept. of Chemistry

**Source identification of airborne particulates of environmental concern using surface and microchemical techniques**

To develop a series of instrumental tests which may be used to identify specific sources of airborne particulates. The environmental toxicity will also be assessed.

Financing/*Financement:* Ontario Ministry of Environment

$107 900

**START/*DÉBUT*:** *1988 08* **END/*FIN*:** *1991 08*

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## 0206-71

Martin, R
(519) 679-2111

University of Western Ontario; Dept. of Chemistry

**Surface chemistry of airborne particles**

To identify sources of airborne particles.

Financing/*Financement:* Ontario Ministry of Environment

$105 000

**START/*DÉBUT*:** *1988 08* **END/*FIN*:** *1992 07*

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## 0206-72

McBean, E
(519) 885-1211

Department of Civil Engineering; University of Waterloo

**Study of the Spatial Distribution of the Impact of Sudbury Smelting Emissions**

1. To study the spatial distribution of the impact of emissions from the Sudbury mining smelters; 2. To study the impact of the variability of meteorologic conditions on seasonal and annual deposition patterns with a view to obtaining estimates of necessary length of monitoring records to attain stable statistics; 3. To study the impacts of spatial intensity of monitoring networks to define depositions pattern; and 4. To encompass the assessment information and thereby provide areal deposition.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$10 900

**START/*DÉBUT*:** *1986 04*

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## 0206-73

McKay, J
(416) 528-2511

Stelco Inc.; Research & Development

**Sinter Plant Stack Opacity Preconditioned Spray System**

The objective is to determine the ability of the Stelco-designed preconditioned water spray system to reduce sinter stack opacity and fine particle loadings. A bluish haze prevents the plume opacity from meeting MOE requirements. The aim is to achieve 20 percent stack opacity as prescribed by regulation 308.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$30 000

**START/*DÉBUT*:** *1986 10*

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## 0206-74

McMahon, T
(519) 885-1211

University of Waterloo; Dept. of Chemistry

**Applications of gas phase ion chemistry to problems in the chemical ionization mass spectrometric analysis of trace organics**

To investigate ion-molecule reactions of potential CI reagent ions with compounds of enviromental interest. To develop new more sensitive, selective CI methods.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$45 000

**START/*DÉBUT*:** *1987 10* **END/*FIN*:** *1990 09*

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## 0206-75

Mitchell, J
(519) 661-2192

University of Western Ontario; Department of Physics

**Studies into the mechanisms of soot control using metallic fuel additives**

Final report available from J. Mitchell. Objective: To understand soot inhibition so that practical additives can be designed.

Financing/*Financement:* Imperial Oil Company

$20 130

**START/*DÉBUT*:** *1984 06* **END/*FIN*:** *1987 06*

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## 0206-76

Mitchner, R
(416) 669-5334

Moniteq Limited

**Determining Sulphur Dioxide Mass Emission Fluxes by Stack Scanning: Phase II**

To continue the initial investigation into determining sulphur dioxide concentrations in stack exhausts by remote scanning from a fixed platform. To evaluate the performance of the sensor in this configuration and identify the important operational parameters. Recommendations on its use as an operational tool will be presented.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$42 000

**START/*DÉBUT*:** *1985 10*

## 0206-77

Moore, T
(514) 398-4961

Université McGill; Département de géographie

**Review of gas emission from soils**

A review of the flux of carbon dioxide and methane from soils, with particular reference to Canadian ecosystems.

Financing/*Financement:* Canada, ministère de l'Environnnment

$3 501

## 0206-78

Moore, T
(514) 398-4961

Université Mc Gill; Département de géographie

**Methane and carbon dioxide evolution from peatlands in eastern Canada**

Establishes the pattern of methane and carbon dioxide evolution from peatlands representative of those in eastern Canada and develops a simple predictive model based on peat type, thermal regime and water table depth. The results will provide valuable information on the contribution of Canada's vast area of peatlands to the global methane and carbon dioxide budget.

Financing/*Financement:* Canada, ministère de l'Environnnment

$8 000 **END/*FIN***: *1988 05*

## 0206-79

Niki, H
(416) 736-2100

York University

**Atmospheric measurements of natural hydrocarbons using gas chromatography/mass spectrometry**

To measure, using gas chromatography/mass spectrometry, a number of key volatile organic species, particularly biogenic hydrocarbons in the oxidant/acid rain problem to be compared against model predictions and also to gain a better understanding of atmospheric chemistry in a Canadian setting, as part of the Eulerian Model Evaluation Study. Output: Progress Report May 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$256 400

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0206-80

Ormrod, D
(519) 824-4120

University of Guelph; Dept. of Horticultural Science

**Determination of the dose-responses for tissue contamination and growth of vegetable crops exposed to chronic levels of organic environmental contaminants originating from industrial processes**

To establish bioaccumulation of trichloromethane and phenol through foliar exposure and contamination of the root zone at concentration ranges including ambient standards using radish, lettuce and tomato. To assess the relative importance of foliar and root exposures to bioaccumulation of these compounds in plant tissue, and establish partitioning exposure and tissue accumulation. To assess the phytotoxicity of these compounds by root, foliar and root and foliar exposure. Phytotoxicity will be evaluated by determining dose-response relationships between growth parameters and contaminant concentrations applied to the growing medium.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$46 400

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0206-81

Ormrod, D
(519) 824-4120

Department of Horticultural Science; University of Guelph

**Dose-Response Relationships for Food Crops; Effects of Airborne Gaseous and Particulate Pollutants**

1. To determine response of tomatoes, potatoes, cabbages, carrot, soybean, corn and wheat to ozone. 2. Dose-response relationships for visible injury and growth rates under long-term exposure at ambient levels in polluted regions. 3. To provide objective data on relationships between pollutant concentrations and plant growth and yield, and to indicate the acceptable levels to protect food crops from damage.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$89 700

**START/*DÉBUT***: *1984 07* **END/*FIN***: *1987 05*

## 0206-82

Peake, E
(403) 220-3194

Kananaskis Centre for Environmental Research; University of Calgary

**Wet and dry deposition in Alberta**

To measure wet and dry deposition in Alberta based on measurements of air quality and deposition velocity of SO2 as well as rainfall.

Financing/*Financement:* Acid Deposition Research Program (Alberta)

$500 000

**START/*DÉBUT***: *1985 12*

## 0206-83

Pengelly, L
(416) 525-9140

McMaster University

**Long term effects of SO2 and aerosols on children with asthma**

To evaluate the hypothesis that chronic low-level exposure to air pollution (sulphur dioxide, SO2; total suspended particulate, TSP; and the fine fraction less than 3.3 micrometers aerodynamic diameter of suspended particules, FF) is associated with the severity of asthma in children.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$46 200
**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 04*

## 0206-84

Poon, D
(604) 666-2862

Environment Canada; Conservation and Protection; Environmental Protection

**Characterization & control of odourous emissions from oil & natural gas fields in British Columbia**

To characterize and assess controls of odour emissions from oil and natural gas production fields in Fort St. John, B.C. area. An emission audit manual to be produced for use by field operators and regulatory agencies to properly assess odourous emissions. In 1984-85 report completed for Phase 1 - odour emission identification and characterization. In 1986-87 report completed for Phase 2 - emission quantification and control assessment. In 1988-89 an emission audit manual is to be produced.

Financing/*Financement:* Panel on Energy Research and Development

$125 000

**START/*DÉBUT***: *1984 06* ***END/FIN***: *ongoing*

## 0206-85

Prior, M
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Reproductive effects of sulphur gases**

To study the effects of exposure to sulphur-containing compounds on the reproductive performance and productivity of animals, including in-vitro and post-natal effects.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1989 07*

## 0206-86

Prior, M
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Chronic effects of sulphur gases**

To study the biomedical effects of repeated exposures to sulphur-containing compounds in animals and by extrapolation, man.

Financing/*Financement:* Alberta Environmental Centre

$535 000

**START/*DÉBUT***: *1986 04*

## 0206-87

Prior, M
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Acute effects of sulphur gases**

To investigate the biomedical effects of acute, single exposure to sulphur-containing compounds in animals and by extrapolation, man.

Financing/*Financement:* Alberta Environmental Centre

$590 000

**START/*DÉBUT***: *1983 04*

## 0206-88

Prior, M
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Inhalation toxicology facilities development**

To develop inhalation system for acute and chronic exposure to toxic or potentially toxic gases, vapours, particulates and aerosols in experimental animals.

Financing/*Financement:* Alberta Environmental Centre

$2 100 000

**START/*DÉBUT***: *1981 04*

## 0206-89

Redman, R
(306) 966-4943

Dept. of Plant Ecology; University of Saskatchewan

**Impact of potash emissions on the environment**

To determine the impact of potash dust emitted from potash refining on vegetation and soil. Interim reports available.

Financing/*Financement:* Potash Corporation of Saskatchewan

$120 000

**START/*DÉBUT***: *1982 03* ***END/FIN***: *1987 12*

## 0206-90

Robertson, E
(613) 584-3311

Chalk River Nuclear Laboratories

**Testing atmospheric dispersion model performance and developing codes to include deposition into the model**

To subject the regulatory Model 308 to the same validation tests using the monitoring data from Sudbury as were applied to the Chalk River dispersion model. If the required meteorological imput data to run the Model 308 is available, to use the monitoring data at Chalk River to also validate the model. To add to the Chalk River dispersion code appropriate routines to predict longterm mean dry deposition and wash out to plume constitutents from the Sudbury stacks. To use all relevant and available monitoring data from the Sudbury area to validate or otherwise extend the model.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$22 000

**START/*DÉBUT***: *1989 08* ***END/FIN***: *1990 07*

## 0206-91

Ross, G
(819) 997-1222

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assess environmental implications and control technologies for fluidized bed combustion facilities**

Publish recommended practices for fluidized bed combustion waste/ wastewater handling and disposal.

Financing/*Financement:* Panel on Energy Research and Development

$1 404 000

**START/*DÉBUT*:** *1981 04* **END/FIN:** *1993 03*

## 0206-92

Roy, D
(416) 978-8846

University of Toronto; Faculty of Forestry

**Relationship of sugar maple decline and corresponding chemical changes in sap composition (carbohydrates and trace elements)**

To investigate organic and trace elemental composition of sap from healthy tress (DI 10.0) to establish the base-line information. (DI = decline index). To compare the results with the sap exudates from low (DI:18-30), medium (DI:31-50) and highly (DI:51) declined trees. To establish the chemical index (CI) with the external indexing system (DI) of MOE and IES group. To relate CI to known indices of climatic, site, atmospheric, and biological variables (which are either already observed or are in the process of being consolidated) in a cause-effect manner. Output: Annual report September 1988.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$54 400

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0206-93

Roy, J
(418) 656-3284

Université Laval; Département de chimie

**Etude de la radioactivité dans le fleuve Saint-Laurent et ses affluents.**

Identification des radionucléides. Mesure de la radioactivité associée à la matière en suspension. Mesure de la radioactivité dans les eaux brutes et traitées. Détermination de la source des radionucléides dans le bassin du Saint-Laurent. Mesures des retombées atmosphériques dues aux essais nucléaires, aux accidents nucléaires et à l'opération des centrales nucléaires. Modes de transport des radionucléides dans les eaux fluviales. Mesure du temps de transport dans les rivières pour certains nucléides. Mesure de l'état physico-chimique des radionucléides.

Financing/*Financement:* Fonds personnel

$8 000

## 0206-94

Sahota, H
(416) 235-5764

Ontario Ministry of the Environment; Air Resources Branch

**Building Wake Study at Darlington**

To study the effects of building wake on the dispersion characteristics of any pollutant released from the building.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$44 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1986 09*

## 0206-95

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Programme de réduction et recyclage des poussières de coke sous-calcinées**

Eliminer la disposition des poussières de coke sous-calcinées au dépotoir. Objectifs: Identifier et évaluer des alternatives permettant de réduire la quantité de poussières générées lors de la calcination du coke; Agglomérer les poussières sous-calcinées et évaluer l'impact de les recycler dans les fours de calcination.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$600 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1989*

## 0206-96

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Etudes de dispersion - aluminerie de Jonquière**

Modélisation de la dispersion des émissions atmosphériques de contaminants de l'aluminerie de Jonquière.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$45 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0206-97

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Optimisation du procédé d'épuration à sec à la ligne 40**

Optimiser le procédé d'épuration pour assurer une qualité constante d'épuration et pour fournir une alumine de qualité plus stable à la salle de cuves.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$1 000 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1988 12*

## 0206-98

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Réduction des goudrons et poussières aux épurateurs humides des salles de cuves Soderberg à goujons horizontaux.**

Réduire le plus possible les émissions atmosphériques de goudron en augmentant l'efficacité des épurateurs, et cela, à un coût qui soit réalisable par Alcan.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$7 000 000

**START/*DÉBUT*:** *1984* **END/FIN:** *1989*

## 0206-99

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Programme de réduction des émission de goudrons**

Réduire à la source les émissions de goudrons lors de l'électrolyse dans des cuves Soderberg G.H.. Identifier, évaluer des alternatives qui permettent d'envisager des réductions de 40% des goudrons, à la source.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$5 500 000

**START/*DÉBUT*:** *1982 01* **END/FIN:** *1989 12*

## 0206-100

Scheffer, J
(604) 228-3496

University of British Columbia

**Emission spectrophotometer plus attachments**

none available

Financing/*Financement:* National Science & Engineering Research Council

$66 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0206-101

Shewchuk, S
(306) 933-5437

Saskatchewan Research Council

**Atmospheric sciences contract research**

Research in the areas of air pollution, acid rain, climatology, organic vapours in the atmosphere; to evaluate the effects of man on the atmospheric environment.

Financing/*Financement:* Environment Canada, Atmospheric Environment

Saskatchewan Environment and Public Safety

Private sector

$550 000

## 0206-102

Steer, P
(416) 965-4081

Ontario Ministry of Environment; Air Resources Branch

**Method development for volatile organics in ambient air**

To develop a method for accurate sampling of volatile organic compounds on a routine basis.

Financing/*Financement:* Ontario Ministry of Environment

$50 000

**START/*DÉBUT*:** *1982 03*

## 0206-103

Steer, P
(416) 965-4081

Air Resources Branch; Ontario Ministry of the Environment

**Inhalable Particulate Sampling at Several Ontario Sites**

1) Evaluate the precision and accuracy of particulate samplers. 2) Collect defensible inhalable particulate data at several Ontario sites to lead to the setting of a provincial standard for IP.

Financing/*Financement:* Ontario Ministry of the Environment, Air Resources Branch

$30 000

## 0206-104

Stokes, P
Whelpdale, D
not available

Institute of Environmental Studies; University of Toronto

**Study of deposition of airborne contaminants in the Great Lakes Basin using lichens and mosses**

Complete analyses of organic and metal contaminants from samples collected in late fall 1986 and continue sampling lichen Cladina rangiferina and Sphagnum moss at select sites around the Upper Great Lakes.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$15 000

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1988 04*

## 0206-105

Strachan, W
(416) 336-4775

Lakes Research Branch; National Water Research Institute; Environment Canada

**Environmental distribution of toxic chemicals**

Investigate the role of the atmosphere in loading toxic chemicals to Canadian surface waters.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0206-106

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Sulphur gases and organic hydrocarbons relative to industrial development**

To assess the input of reduced sulphur gases and organic hydrocarbons from gas processing facilities as well as other industrial development in relation to background levels as determined at a remote mountain location in Alberta. The findings of this project are contained in an overall report on biophysical aspects of acid deposition in Alberta submitted to the Acid Deposition Research Program (ADRP).

Financing/*Financement:* Canadian Petroleum Association

Alberta Environment

$200 000

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1988 06*

## 0206-107

Sullivan, P
Yip, H
(519) 679-2111

University of Western Ontario; Applied Mathematics Dept.

**Atmospheric dispersion of vapours**

To model the turbulent dispersion of the vapours resulting from the instantaneous (explosive) release of volatile liquids into the atmosphere in order to assess the hazards posed by such released to general population centres within a radius of 50 km of the release point.

Financing/*Financement:* Department of National Defence Canada

Natural Sciences & Engineering Research Council

$99 874

**START/*DÉBUT*:** *1989 03* **END/FIN:** *1989 09*

## 0206-108

Thomas, G
(416) 822-4111

Environmental Chemical Engineering Division; Ontario Research Foundation

**Short Term Mutagenicity & Chemistry of Organic Solvent Extractable Fraction of Coke Oven Emissions**

1. To utilize collected coke oven emission samples from 3 steel mills in Ontario to better define the chemical nature of coke oven emissions (fractionation, compound identification, compound quantification). 2. To relate the findings to the mutagenicity of the various fractions in biological assay studies for comparison with the mutagenicity of nonfractionated material.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$109 400

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1988 05*

## 0206-109

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Etude des boues des eaux usées: effet des pluies acides et de l'incinération sur leur contenu en métaux lourds.**

Evaluer l'impact des pluies acides et de l'incinération sur les boues issues du traitement des eaux usées. Objectifs: reproduire en laboratoire les conditions naturelles de la lixiviation des boues par les pluies acides; étudier les mécanismes des transformations chimiques que subissent les métaux et leurs oxydes lors de l'incinération des boues des eaux usées.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$20 000

## 0206-110

Underwood, G
(306) 787-6196

Saskatchewan Environment and Public Safety; Air Quality Section

**Saskatchewan air emission inventory of sulphur dioxide and nitrogen oxides**

A report 'Saskatchewan Air Emission Inventory of Sulphur Dioxide and Nitrogen Oxides - 1985' is available from Sask. Environment and Public Safety.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$12 000

**START/*DÉBUT*:** *1982*

## 0206-111

Viswanathan, S
(519) 255-9797

Clayton Environmental Consultants

**Sampling of biomedical waste**

Perform stack sampling at ten biomedical waste incinerators. Using separate sampling trains, collect stack samples for the following analysis: a) particulates, trace metals and hydrogen chloride, b) trace organic species - PAHs, PCDDs, PCDFs, PCBs, chlorobenzenes, and chlorophenols, c) volatile organic species such as chloroform, benzene ethylene chloride, d) bacteria, spores and viruses. Record quantities and classifications of wastes and observe incinerator operations during sampling. Weigh the ash residue after each batch incineration and prepare a representative sample of this ash for chemical and other analyses and a leachate study. Transport all samples to MOE laboratories. Provide a comprehensive report after completion of this study (including two preliminary reports).

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$400 000

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 01*

## 0206-112

Wardle, D
(416) 739-4632

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**RAGS observatory**

To conduct long-term operation of an early warning system for climatic change. Radiation changes in 10-12 micron should precede any climatic warming by several decades.

Financing/*Financement:* Panel on Energy Research and Development

**START/*DÉBUT***: *1989 04* **END/FIN**: *ongoing*

## 0206-113

Whelpdale, D
(416) 739-4869

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Atmospheric chemical cycle**

To determine the magnitude of the transport of North American pollutants to other locations on the globe.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$140 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1989 03*

## 0206-114

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**Metal toxicity, plant metal tolerance and soil detoxification on the Sudbury Industrial Barrens**

To determine the exact nature and mechanism of operation of the toxic principle in Sudbury's acid, metal-contaminanted soils; to determine which plant species are able to grow on toxic soils, and to understand their tolerance mechanism; to fully understand the mechanism by which dolomitic limestone detoxifies the Sudbury barren soils, and to determine what other detoxicants might be used. Reports are available.

Financing/*Financement:* Laurentian University Research Fund

$1 000

**START/*DÉBUT***: *1978 05*

## 0206-115

Wituschek, E
(604) 666-2815

Environment Canada; Conservation and Protection; Environmental Protection

**Test burn of chlorophenol contaminated wood wastes**

To characterize the emissions (chlorophenol, dioxin, furans), assess environmental impacts and develop emission and air quality criteria for the burning of wood wastes contaminated by chlorophenols. Tests were completed on Sept. 25, 1987. Report scheduled for July 1989.

Financing/*Financement:* Energy, Mines and Resources Canada

British Columbia Ministry of Environment and Parks

Environment Canada, Conservation and Protection

$210 000

**START/*DÉBUT***: *1986 09* **END/FIN**: *1987 09*

## 0206-116

Wojtiw, L
(403) 450-5280

Alberta Research Council

**The role and importance of particulate emissions in the precipitation chemistry of western and northern Canada**

The purpose of the study is to consider the role of atmospheric dust in the chemistry of precipitation. Report available: Saskatchewan Research Council F-906-24-B-88, Oct. 1988.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

# 03

## WATER

## *EAU*

## 0300-1

Andres, D
(403) 450-5279

Alberta Research Council

**Scour characteristics of Alberta rivers**

Measure scour and improve the design criteria for estimating scour near riverine structures on mobile beds. Reports are produced on an annual basis as data is measured and analysed.

Financing/*Financement:* Alberta Transportation & Utilities

Alberta Environment

Alberta Research Council

**START/*DÉBUT*:** *1981 01*

## 0300-2

Andres, D
(403) 450-5279

Alberta Research Council

**Breakup investigations on the Athabasca River, Alberta**

Investigate the breakup processes, model onset of breakup, and characterize with jams on the Athabasca River at Fort McMurray. Numerous reports are being produced on an annual basis.

Financing/*Financement:* Alberta Environment

Alberta Research Council

**START/*DÉBUT*:** *1981 01*

## 0300-3

Bardecki, M
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Mitigation of impact on wetlands of agricultural drainage projects**

Analysis of mitigation measures associated with Eastern Ontario subsidiary agreement agricultural drains. Report published.

Financing/*Financement:* Eastern Ontario Subsidiary Agreement

$2 080

**START/*DÉBUT*:** *1986 05* **END/*FIN*:** *1986 10*

## 0300-4

Bardecki, M
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Economic and environmental impacts of agricultural land drainage**

Provide base-line data regarding drainage projects in Southern Ontario. Interim Report.

Financing/*Financement:* Environment Canada, Conservation & Protection

Social Sciences and Humanities Research Council

$20 595

**START/*DÉBUT*:** *1984 05* **END/*FIN*:** *1984 10*

## 0300-5

Bégin, Y
(418) 656-5630

Université Laval; Centre d'études nordiques

**Dynamique des écosystèmes riverains du Nouveau-Brunswick**

Cette étude vise à reconstituer l'évolution récente du trait de côte en réponse à la transgression marine. On cherche à préciser les processus écologiques et géomorphologiques contribuant à la modification des écosystèmes riverains au cours des dernières décennies. La reconstitution du dynamisme des écosystèmes s'appuie sur l'analyse dendrochronologique des populations ligneuses affectées par la migration des cordons de plage, sur l'évaluation du taux d'érosion dans des milieux particulièrement exposés et sur l'étude écologique des marais littoraux.

Financing/*Financement:* Fonds interne de recherche, Université de Moncton

Fonds interne de recherche, Université Laval

$6 500

## 0300-6

Beveridge, T
(519) 824-4120

Department of Microbiology; University of Guelph

**Heavy metal immobilization by bacteria and their products: biomineralization**

To study the fundamental interactions of bacteria with soluble toxic heavy metal ions and the resulting biomineral which is formed.

Financing/*Financement:* Natural Sciences and Engineering Research Council

United States Environmental Protection Agency

## 0300-7

Chew, H
(306) 975-5744
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Radiation ice modelling**

Model the absorption of short-wave radiation by ice and how such absorption leads to internal melting and an increase in ice porosity. Develop a methodology for predicting changes in porosity and ultimately ice strength based on standard meteorological information.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *ongoing*

## 0300-8

Cooke, F
(613) 545-6129
Biology; Queen's University

**The role of variable environments in annual estimates of breeding success for lesser snow geese**

unavailable

Financing/*Financement:* Environment Canada, Conservation & Protection

$1 750

**START/*DÉBUT***: *1987* **END/FIN**: *1988 00*

## 0300-9

Cooke, F
(613) 545-6129
Biology Dept.; Queen's University

**A long term population study of lesser snow geese**

None available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$225 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1990 03*

## 0300-10

Dalrymple, R
(613) 545-6172
Geography; Queen's University

**Investigation of storm-dominated sedimentation in the Scotian Shelf and Grand Banks**

unavailable

Financing/*Financement:* Energy, Mines and Resources Canada

$4 600

**START/*DÉBUT***: *1986* **END/FIN**: *1987 00*

## 0300-11

Davies, R
(403) 220-5275
Dept. of Biological Sciences; University of Calgary

**Effects of variable dissolved oxygen regimes on growth, feeding and production of lentic macroinvertebrates**

Temperate lentic ecosystems show a high variability in dissolved oxygen regimes exhibiting seasonal and diel hypoxia, hyperoxia and anoxia. The effects of various oxygen regimes on growth, feeding and reproduction of macroinvertebrates will be examined.

Financing/*Financement:* Natural Sciences and Engineering Council of Canada

$98 000

**START/*DÉBUT***: *1989 01* **END/FIN**: *1991 01*

## 0300-12

Demuth, M
(306) 975-5754
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Eclipse - CRR drill evaluation**

To fully test the CRR ice-core drill, under the logistic constraints provided by the Icefield Ranges of Kluane National Park, Yukon by Oct. 1989. To evaluate its capability to core ice with greater accuracy and quality.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* **END/FIN**: *1990*

## 0300-13

Demuth, M
(306) 975-5754
Hydrology Division; National Hydrology Research Institute; Environment Canada

**River ice breakup advance**

To develop a physically-based model describing the interaction of river surges and intact ice covers, and to formulate a methodology for field investigations of the kinematic and processes in river-surge/intact-ice interaction.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* **END/FIN**: *ongoing*

## 0300-14

Dyke, L
(613) 545-6173
Geological Science; Queen's University

**A hydrogeological study of basement seepage risk in Kingstown Township, Ontario**

unavailable

Financing/*Financement:* Queen's University

$3 700

**START/*DÉBUT***: *1987* **END/FIN**: *1988 00*

## 0300-15

French, J
(416) 667-7700
Institute for Aerospace Studies; University of Toronto

**Screening Methods Air and Water: Inductively Coupled Plasma Mass Spectrometry for Elemental Analysis**

1. To develop ICP/MS methods for multielement analyses of solid and liquid environmental materials. 2. To develop ICP/MS as detector for liquid and gas chromatography columns to determine the chemical form of metals. 3. To extend above to include isotopic ratio studies. 4. To verify the developed methods.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$135 000

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1988 06*

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## 0300-16

Goodison, B
(416) 739-4345

Environment Canada; Atmospheric Environment Service; Canadian Climate Centre

**Snowmelt acidic shock**

To develop and validate an acidic snowmelt shock model. Climate finds on frequency and type of melt event to be used.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

$16 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

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## 0300-17

Gowda, H
Palmer, M
(416) 485-7715

Gore & Storrie Limited

**Ottawa River Nuclear Spill Contingency Model Development - Phase II**

To interface 1-D model algorithms with TWODIFIN model; to develop algorithms for special distributions at specified times; to carry out model validation studies; to optimize process parameters; to incorporate a user-specified graphical package; to develop algorithms for interactive model of execution, and to familarize MOE staff on model operation aspects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$40 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1986 12*

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## 0300-18

Hammond, B
(403) 427-3943

Alberta Environment

**Cooperative program in surface water engineering**

Investigate long-term as well as randomly occurring phenomena in areas such as: the fluvial mechanics of river engineering, erosion and scouring, sediment yield and the freeze-up and safety, protection of property or a defined need for information to be used for the design of hydraulic structures.

Financing/*Financement:* Alberta Environment
Alberta Research Council
Alberta Transportation

**START/*DÉBUT*:** *1975* **END/FIN:** *1987 03*

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## 0300-19

Hammond, B
Baddaloo, E
(403) 427-3943

Alberta Environment

**Flow and shear stress in curved channels**

To develop design criteria for bank protection works on curved channels. Criteria related to the starting and ending points of the protection and the longitudinal variation of velocity and shear stress applied within the works are to be established for circular bends of limited length.

Financing/*Financement:* Alberta Environment

$25 000

**START/*DÉBUT*:** *1985 12* **END/FIN:** *1987 03*

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## 0300-20

Hammond, B
Baddaloo, E
(403) 427-3943

Alberta Environment

**Energy balance snow melt infiltration modelling**

The development of a mechanism to predict the volume of snow melt and its affects on soil moisture and surface runoff in the prairie regions, including the development and performance evaluation of an energy budget snowmelt model.

Financing/*Financement:* Alberta Environment

$74 000

**START/*DÉBUT*:** *1984* **END/FIN:** *1987 03*

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## 0300-21

Hirst, J
Page, J
(613) 545-6588

Queen's University; Chemistry Department

**Development of centre for environmental studies, University of Ibadan, Nigeria**

none available

Financing/*Financement:* Canadian International Development Agency

$308 309

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

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## 0300-22

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Boreal forest stand dynamics in central Alberta**

To study the plant community and population dynamics of 8 boreal forest ecosystems representing 3 major habitat ty-

pes in which important environmental factors are also monitored. Jointly with Dr. Michael S. Ross.

Financing/*Financement:* Alberta Environment Employment Program

Environment Canada, Conservation & Protection

Alberta Environment Research Trust

Alberta Environment

$298 038

**START/*DÉBUT*:** *1982 01*

## 0300-23

LaRoi, G
(403) 492-4163

Botany Department; University of Alberta

**Status of nitrogen in the vegetation & soil in a post-fire area of the Boreal Forest Region**

Variations in the status of nitrogen in the vegetation and soil along a post-fire successional gradient in the Boreal Forest Region; and accumulation of nitrogen and phosphorus in boreal vegetation and soils and its relationship to plant succession. Dr. James Fyles completed his doctoral thesis on this subject, working in the Hondo-Slave Lake area of central Alberta. His thesis is a public document, and several published papers have been derived from it.

Financing/*Financement:* Alberta Environment

Alberta Environment Research Trust

**START/*DÉBUT*:** *1985 04*

## 0300-24

Power, B
(709) 772-5491

Environment Canada; Conservation & Protection

**Study of a fish offal dumping site in Fogo Harbour, Newfoundland**

To determine the physical and chemical problems caused by a gurry ground that has been in continuous use over a number of years. This information would then assist in the protection of fisheries and recreational activities from pollution through the permitting of dump sites under the Ocean Dumping Control Act.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$7 500

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1986 01*

## 0300-25

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Systèmes experts pour la gestion et la protection de l'environnement.**

Mettre au point des outils utilisant la technique des systèmes experts pour aider à résoudre les problèmes reliés à la gestion et à la protection du milieu naturel comme l'aide à la décision en cas de déversements accidentels de produits toxiques, l'évaluation rapide des impacts potentiels d'un projet, etc.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Hydro-Québec

$25 000

**START/*DÉBUT*:** *1986*

## 0300-26

Seyfried, P
(416) 978-2760

Department of Microbiology; Faculty of Medicine; University of Toronto

**Klebsiella Pneumoniae Membrane Filtration Procedure**

1. Development of a protocol for the enumeration of Klebsiella pneumoniae from environmental samples. 2. Determination of the ability of experimental methods to isloate Kp. sensu stricto. 3. Assessment and documentation of the performance characteristics of the method of choice.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$62 800

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1987 12*

## 0300-27

Yalin, M
(613) 545-2136

Civil Engineering; Queen's University

**Sediment transportation in open channels and rivers**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$75 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 03*

## 0301-1

Andres, D
(403) 450-5279
Alberta Research Council

**Interstation storage losses during freeze-up on regulated rivers**

A numerical ice formation model has been developed to simulate freeze-up on a large regulated river to compute the flow lost to channel storage during freeze-up. Final report is due in Aug. 1989.

Financing/*Financement:* Water Survey of Canada
Alberta Research Council

**START/*DÉBUT:*** *1989 01* **END/FIN:** *1989 06*

## 0301-2

Baddaloo, E
(403) 427-3943
Alberta Environment

**Control of irrigation return flows in Southern Alberta**

To study the sensitivity of irrigation return flow rates to several irrigation canal design and operation parameters. A model was used to investigate factors such as: shape, slope, condition, design capacity of canals, number of depth control structures, seepage rates, flow rates, operation and type of control structures and number of delivery points.

Financing/*Financement:* Alberta Environment
$32 000

**START/*DÉBUT:*** *1984* **END/FIN:** *1986 10*

## 0301-3

Belore, H
(416) 497-2929
Cumming-Cockburn Limited

**Regional low flow analysis for the Central and Southeastern regions of Ontario**

To test available methodologies for predicting low flows in the Central and Southeastern regions. To identify suitable techniques for application and required research/refinements. Develop an appropriate database including additional parameters such as evaporation, groundwater fluctuations (well records), etc. Refine multivariate analysis techniques for predicting low flows. Research to develop alternative computerbased graphical low flow regional techniques.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$52 500

**START/*DÉBUT:*** *1989 05* **END/FIN:** *1990 05*

## 0301-4

Belore, H
Jarratt, C
(416) 497-2929
Cumming-Cockburn & Associates Ltd.

**Regional Analysis of Low-Flow Characteristics**

To develop a technique for providing estimates of low-flow characteristics for a watercourse based on the physical parameters of the watershed and to test it on a small sub-area.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$45 000

**START/*DÉBUT:*** *1986 11* **END/FIN:** *1988 03*

## 0301-5

Beltaos, S
(416) 336-4898
Rivers Research Branch; National Water Research Institute; Environment Canada

**Ice jams and floods**

To develop new knowledge on ice jamming processes and build predictive models for improved ice management capabilities.

Financing/*Financement:* Environment Canada, Conservation and Protection
$1 020 000

**START/*DÉBUT:*** *1979 07* **END/FIN:** *1991 07*

## 0301-6

Brugman, M
(306) 975-5966
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mountain hydrology and glacier meltwater**

Review all elements of glacial hydrology of most direct relevance to Canada and the mandate of NHRI and propose a comprehensive, long-term research program to address the problems identified, by March 1, 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT:*** *1989* **END/FIN:** *ongoing*

## 0301-7

Brunelle, P
(819) 821-7106
Université de Sherbrooke; Département de génie civil

**Techniques de prévision des crues par l'analyse des séries temporelles**

Prévision en temps réel des montées de plans d'eau en réponse aux mesures de débits ou niveaux en amont. Simulation du comportement de bassins et modélisation.

Financing/*Financement:* Québec, ministère de l'Environnement

$53 000

**START/*DÉBUT:*** *1985* **END/FIN:** *1987 07*

## 0301-8

Crowder, A
unavailable

Queen's University; Dept. of Biology

**A survey of the macrophytes in the Bay of Quinte**

Survey (map and speciation) of emergent and submergent aquatic plants in the Bay of Quinte littoral zone. Compare survey findings to other measurable parameters of water quality in an effort to estimate recent water quality and ecosystem changes. Compare findings to historical biomass and species data to record recent changes in macrophyte beds in the littoral zone.

Financing/*Financement:* Ontario Ministry of Environment

$7 000

**START/*DÉBUT:*** *1988 05*

## 0301-9

Dalrymple, R
(613) 545-6172

Queen's University; Geological Sciences

**Sedimentology and chronology of sediments in the Cataraqui Lagoon (Kingston) - implications for lake-level fluctuations**

none available

Financing/*Financement:* Queen's University

$3 030

**START/*DÉBUT:*** *1988 12* **END/FIN:** *1989 11*

## 0301-10

Danielson, R
Okazawa, N
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Landtreatment of oily waste sludges**

To determine the effects of landtreatment with oily wastes on the long term use of the land for agronomic purposes, to determine the uptake of undesirable organic compounds and heavy metals by crops, to determine the effects of landtreatment on surface and groundwater quality and to determine the effectiveness of landtreatment as a disposal method for oilfield wastes. Reports available.

Financing/*Financement:* Canadian Petroleum Association

Environment Canada, Conservation & Protection

**START/*DÉBUT:*** *1986 01*

## 0301-11

Demuth, M
(306) 975-5754

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Coastal mountain glaciers**

Conduct glacier mass-balance surveys in the southern regions of the Coastal Mountains. To expand the database availability such that models linking climatic variability with glacier response may be refined and the processes, intrinsic to that link, better understood.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT:*** *1989* **END/FIN:** *ongoing*

## 0301-12

Donelan, M
(416) 336-4879

Research and Applications Branch; National Water Research Institute; Environment Canada

**Wave mechanics**

To discover or develop theories and/or models to describe and predict the interaction of wind and water, including surface waves; thesis of mass and energy, turbulence, and orbital velocity beneath breaking waves.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

**START/*DÉBUT:*** *1988 04* **END/FIN:** *ongoing*

## 0301-13

Donelan, M
(416) 336-4879

Research & Applications Branch; National Water Research Institute; Environment Canada

**Surface waves dynamics experiment (SWADE)**

To understand the dynamics of the evolution of the wave field in the open ocean. To determine the effect of waves on air/sea transfer of momentum, heat and mass.

Financing/*Financement:* Environment Canada, Conservation and Protection

United States Office of Naval Research

$500 000

**START/*DÉBUT:*** *1988 01* **END/FIN:** *1993 01*

## 0301-14

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Télé-interprétation en hydrologie fluviale.**

Etablir une méthode de télé-interprétation de la rugosité du lit mineur des cours d'eau à l'aide de photographies aériennes au 1: 15000. Cette méthode peu coûteuse a été éprou-

vée avec un degré de confiance de plus de 81%. Rapport disponible.

Financing/*Financement:* Royal Canadian Geographical Society

Sources diverses

$17 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1990 04*

## 0301-15

Engel, P
(416) 336-4737

Research and Applications Branch; National Water Research Institute; Environment Canada

**Fluvial engineering**

To improve methods of river meterology, to develop methods for determining sediment transport and to predict other river processes. To guide and advise water resources engineers and managers on technical developments relevant to fluvial engineering.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/FIN:** *ongoing*

## 0301-16

Fogarasi, S
(306) 975-5758

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Proxy climate data from ice cores**

To determine the nature of palaeo-atmospheric processes on a scale of seasons to centuries with emphasis on climatic change, and place the results in a hydrological context.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0301-17

Francis, R
(902) 368-5038

Government of Prince Edward Island; Community and Cultural Affairs

**West River Basin Study**

Hydrogeological assessment to determine quality and quantity of water for the Greater Charlottetown area.

Financing/*Financement:* Prince Edward Island, Community and Cultural Affairs

Environment Canada, Conservation and Protection

Charlottetown Water Commission

$250 000

**START/*DÉBUT*:** *1983 04* **END/FIN:** *1989 06*

## 0301-18

Hammond, B
Baddaloo, E
(403) 427-3943

Alberta Environment

**Flatland hydrology simulation model**

To develop a model that will include a spatially varied soil moisture budget for a flatland watershed. Concepts of potential and actual contributing areas will be used to determine storage losses, thereby allowing more accurate determination of the excess rainfall that will convert into run-off.

Financing/*Financement:* Alberta Environment

$32 000

**START/*DÉBUT*:** *1983* **END/FIN:** *1986 11*

## 0301-19

Holdsworth, G
(306) 975-5755

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Peyto Glacier, Alberta**

Determine the mass balance of Peyto Glacier as a contribution to the World Glacier Monitoring Service and for the improvement of our knowledge about glacier hydrology and hydrometeorology.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0301-20

Hudson, H
Andres, D
(403) 450-5275

Alberta Research Council

**Hydrologic characteristics of Alberta river basins**

To develop regional flood frequency curves on the basis of physiographic characteristics of river basins in Alberta.

Financing/*Financement:* Alberta Transportation & Utilities

Alberta Research Council

**START/*DÉBUT*:** *1984 04*

## 0301-21

Mackie, G
(519) 824-4120

University of Guelph; Dept. of Zoology

**Ecology and control of the biofouler, Dreissena polymorpha, (Bivalvia: Dreissenidae), new to the Great Lakes**

To determine life history characteristics of the Lake St. Clair population of Dreissena polymorpha. To determine the age and growth rate of individuals and of the population in Lake St. Clair and the extent of its distribution and growth rates in the Great Lakes. To determine the potential impact of the zebra mussel on native species of unionid mussels in Lake St. Clair and some of its major tributaries.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$86 500

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1992 04*

## 0301-22

MacMillan, R
(403) 438-7515

Alberta Research Council

**Surface water storage - A GIS and digital elevation model approach to the simulation of surface water flow, accumulation and storage at a farm scale**

To develop and test a computer based method for farm scale determination of: location and extent of depressions capable of storing surface water; extent to which this depressional storage is occupied by surface water at anytime; the hydrologic linkages between depressions; and the possible hydrological and ecological impacts of draining or removing water from any or all depressions. Two papers being prepared for journal submission, PhD thesis at University of Edinburgh, Scotland.

Financing/*Financement:* Alberta Research Council

$146 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1991 03*

## 0301-23

Marsh, P
(306) 975-5752

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mackenzie Delta hydrology**

Determine the relative importance of the various water balance components of delta lakes and the spatial variation in the hydrological regime. Develop models to predict lake levels under natural and altered regimes. Study the effect of climate change induced sea-level rise on delta hydrology. Study long term changes in delta lake hydrology by utilizing proxy data.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0301-24

Marsh, P
(306) 975-5752

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snowmelt run-off in permafrost basins**

To determine the rates of, and processes controlling: melt metamorphism and the vertical flux of water through the snow cover; exchange of water between the snowpack, active layer, and permafrost, and the rate of removal of the snow cover; the lateral movement of meltwater through the snow cover and the active layer to the stream channel; to apply this information modelling large scale snow processes; and study the release of pollutants from arctic snow covers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0301-25

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Hydrology of wetlands**

Initiate a study to determine the role of wetlands in the hydrological cycle and the implications of wetland drainage.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0301-26

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snow management and snowmelt infiltration**

To determine tillage methods to enhance snowmelt infiltration; meltwater infiltration into cracked soils; and effect of tillage practices on surface run-off and groundwater recharge.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0301-27

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Prairie evaporation study**

Initiate study of evaporation from open-water surfaces on the Prairies by obtaining accurate field data that will: compare the results from existing evaporation models and develop a standard for evaporation measurement and information to develop a more accurate hydrological model.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0301-28

Oldham, W
(604) 228-3907

University of British Columbia

**Flood control research**

none available

Financing/*Financement:* British Columbia Disaster Relief Fund

**START/*DÉBUT***: *1984 04*

## 0301-29

Perla, R
(306) 975-5738

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snow properties for remote sensing**

Determine the interaction of microwaves with hydrological systems consisting of snow, soil and vegetative components, that is complement the statistical correlations with physical parameters and devise statistical/physical models with reduced variance.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0301-30

Plamondon, A
(418) 656-2116

Université Laval; Département des sciences forestières

**Efficacité du drainage des milieux boisés humides.**

Mesurer les effets du drainage sylvicole sur le comportement de la nappe phréatique et sur la croissance des arbres à court terme. Vérifier l'applicabilité de deux modèles agricoles permettant la simulation de la hauteur de la nappe d'une part et la simulation des débits d'autre part, avec ou sans réseau de drainage.

Financing/*Financement:* Papeterie Reed Ltée

## 0301-31

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mechanical strength of zero degree C river ice**

To develop a physically-based model that characterizes the decrease in strength parameters associated with the thermal decay of ice after it has become 0 degrees C isothermal. To determine the threshold 'strength' values associated with the break-up of ice covers. To develop methods by which such threshold values can be determined for the purpose of forecasting break-up.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0301-32

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Nashwaak River break-up**

Establish the meteorological, hydraulic and hydrometric conditions that control break-up and ice jamming on the Nashwaak River, New Brunswick.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0301-33

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Economic significance of river ice jams**

To determine the economic significance to the Canadian economy of damage resulting from river ice jams.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *1991*

## 0301-34

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Microwave sensing of snow over tundra environments**

Evaluate the usefulness of passive satellite microwave imagery for the measurement of snow-cover conditions in northern tundra environments. Develop suitable algorithms for relating imagery and snow-cover information.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *1989*

## 0301-35

Rouleau, A
(418) 545-5213

Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Caractérisation et modélisation hydrogéologique de massifs rocheux fracturés.**

L'écoulement de l'eau souterraine et le transfert de polluants dans des massifs rocheux fracturés prennent place surtout dans les réseaux de fractures. Nous visons à développer des méthodes efficaces de caractérisation 1) de la géométrie des réseaux de fractures et 2) du comportement hydraulique de massifs rocheux. Nous développons des modèles probabilistes qui intègrent les données de terrain et qui simulent l'écoulement et le transfert de polluants dans des massifs rocheux fracturés.

Financing/*Financement:* Fonds institutionnel de recherche

Québec, ministère de l'Enseignement supérieur et de la Science

$8 200

## 0301-36

Sanderson, M
Hebert, P
(519) 253-4232

Great Lakes Institute; University of Winsdor

**Future Great Lakes water levels - environmental and political impacts**

Objectives (1) To model future changes in Great Lakes water levels. (2) To determine the environmental impacts of fu-

ture lake level changes. (3) To study the social and economic implications of lake level changes.

Financing/*Financement:* Donner Canadian Foundation

$200 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988 01*

## 0301-37

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling climate variations of air-water interactions**

To collate hydrometeorological/limnological data (1984-1989) to extend existing long term climate data base for Lake Erie and Lake Ontario and to compute surface energy balances and turbulent exchanges. To analyse NWRI surveillance data (1966-present) on the lower Great Lakes to derive basin wide vertical temperature profiles and accurate heat storage estimates for model verification and detection of climate change in lake thermal characteristics. To finalize report on water quality, seston, sediment chemistry and hydrology on Lake St. Clair. This study forms part of the NWRI commitment to the Canada Climate Program.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$400 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1996 04*

## 0301-38

Skafel, M
(416) 336-4736

Research and Applications Branch; National Water Research Institute; Environment Canada

**Coastal engineering**

To develop techniques and models for wave prediction, shoreline evaluation, and wave interaction with the bottom such as resuspension of cohesive sediments, and wave structure interaction.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

**START/*DÉBUT*:** *1988 04* **END/FIN:** *ongoing*

## 0301-39

Smart, C
(519) 679-2111

University of Western Ontario; Geography Department

**Alpine hydrology**

Identifying and describing alpine drainage systems in glaciers, karst groundwater systems, fracture and debris aquifers.

Financing/*Financement:* Natural Sciences & Engineering Research Council

University of Western Ontario

$200 000

**START/*DÉBUT*:** *1984 08*

## 0301-40

Tsang, G
(416) 336-4622

Rivers Research Branch; National Water Research Institute; Environment Canada

**River environmental and ice studies**

To better understand the physical characteristics of bubble plumes and their biological affects when used in an aquatic environment. To develop a basic understanding of the early formation and properties of river ice (frazil and anchor ice) and its bio-chemical effects. To investigate the biochemical degradation of toxic substances in rivers for better river environmental management.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Hydro

$200 000

**START/*DÉBUT*:** *1988 07* **END/FIN:** *1991 01*

## 0301-41

Van der Vinne, G
Andres, D
(403) 450-5276

Alberta Research Council

**Regional ice forces in Alberta**

The quantification of the breakup process and defining the characteristic ice forces developed during breakup, on a regional/ climatic basis. Reports are produced on an annual basis.

Financing/*Financement:* Alberta Transportation & Utilities

Alberta Research Council

**START/*DÉBUT*:** *1988 12* **END/FIN:** *1993 12*

## 0301-42

van Roodselaar, A
Skinner, F
(403) 632-6761

Alberta Environmental Centre

**Ozone technology applications to drinking water**

To develop and assess current ozone technology for application to drinking water problems in Alberta.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT*:** *1986 06*

## 0301-43

Wankiewicz, A
(306) 975-5757

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Microwave remote sensing of basin storage**

Develop procedures for continuous monitoring over time of snow cover, snowpak water equivalent and snowmelt events, using microwave satellite.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1987* **END/FIN:** *ongoing*

## 0301-44

Wankiewicz, A
(306) 975-5757

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Multi-satellite monitoring of hydrological processes**

Develop satellite basin-moisture system using target wetness indices derived from archived microwave and shortwave observations of Prairie watersheds.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT:*** *1988* **END/FIN:** *ongoing*

## 0301-45

Wankiewicz, A
(306) 975-5757

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Satellite run-off forecasting**

Develop satellite run-off prediction procedures using watershed snowpak and antecedent moisture derived from archived microwave observations of Canadian watersheds.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT:*** *1987* **END/FIN:** *ongoing*

## 0301-46

Watt, E
(613) 545-2137

Queen's University

**The Effects of Tile Drainage and Open Ditches on Peak Flows and Dry Weather Flows**

To assess the effects of tile drainage and open ditches and dry weather flows with particular application to Ontario.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$70 600

**START/*DÉBUT:*** *1984 11* **END/FIN:** *1987 05*

## 0301-47

Zeman, A
(416) 336-4882

Lakes Research Branch; National Water Research Institute; Environment Canada

**Cohesive sediment dynamics**

To apply and further develop a numerical model to determine the factor of safety against seepage erosion. To interpret sediment dynamics from geotechnical profiles of Lake Erie cores.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$60 000

**START/*DÉBUT:*** *1989 04* **END/FIN:** *1990 03*

## 0301-48

Zemell, S
Bishop, R
(416) 365-7337

MacLaren Plansearch Inc.

**'OPTSTOR' Program: Determining Optimum In-System Storage Requirements in Over-loaded Sewer Systems**

1. To further develop the existing OPTSTOR model to enhance its capabilities. 2. To demonstrate the OPTSTOR methodology with an example case study.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$21 000

**START/*DÉBUT:*** *1986 10*

## 0302-1

Afghan, B
(416) 336-4661

Research and Applications Branch; National Water Research Institute; Environment Canada

**Development of liquid chromatographic multidetection systems to characterize and measure environmental pollutants**

Automation and validation of HPLC-Multidetection system for trace and ultratrace analysis. Reactive and pyrolytic detection in chromatography and improved data handling techniques for quantitative analysis and screening of pollutants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$100 000

**START/*DÉBUT:*** *1989 04* ***END/FIN:*** *ongoing*

## 0302-2

Aldworth, G
(416) 671-2600

Beak Consultants Ltd.

**Study of the Discharge of Grey Water from Pleasure Boats**

1) Determine the amount of 'grey' & 'black water' produced by three types of pleasure boats in Ontario 2) Determine the bacterial characteristics of grey water, specifically with regard to E. Coli, fecal Coliform, Pseudomonas Aeruginosa and Staphylococcus Aureus. 3) Evaluate the effects on the receiving recreational waters of the discharge of this grey water. 4) Estimate whether the capacity of existing pumpout facilities in Ontario is adequate.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$87 700

**START/*DÉBUT:*** *1987 06* ***END/FIN:*** *1988 07*

## 0302-3

Alikhan, M
Mwangi, S
(705) 673-3042

Laurentian University; Biology

**Laboratory study of the relationship between cadmium and nickel uptake on copper and zinc concentrations in selected tissues of freshwater crayfish**

To correlate concentrations of cadmium and nickel in whole crayfish with concentrations of metals injected into crayfish. To determine effects of cadmium and nickel injections on copper and nickel stores in the selected tissues of the crayfish.

Financing/*Financement:* Canadian International Development Agency

$50 000

**START/*DÉBUT:*** *1987 04* ***END/FIN:*** *1989 03*

## 0302-4

Alikhan, M
Bagatto, G
(705) 675-1151

Laurentian University; Biology

**Copper, cadmium, iron, magnesium, manganese & nickel concentrations in crayfish from freshwater rese**

To measure the amount of heavy metals in various tissues of the freshwater crayfish as a function of the distance of the emission site from the habitat. Reports are available.

Financing/*Financement:* Natural Sciences and Engineering Research Council

Centre in Mining & Mineral Exploration

$16 900

**START/*DÉBUT:*** *1985 06* ***END/FIN:*** *1987 07*

## 0302-5

Alikhan, M
Zia, S
(705) 675-1151

Laurentian University; Biology

**Lab study, relationship between levels of copper & nickel in water, and uptake in tissue of crayfish**

To study the relationship between levels of copper and nickel in water, and their uptake and accumulation by various body tissues in the crayfish. No publication available as of yet.

Financing/*Financement:* Natural Sciences and Engineering Research Council

Centre in Mining and Mineral Exploration

$16 900

**START/*DÉBUT:*** *1985 06* ***END/FIN:*** *1987 06*

## 0302-6

Alkema, H
(416) 336-4929

Research and Applications Branch; National Water Research Institute; Environment Canada

**WQB, PPWB and federal/provincial quality assurance programs**

To ensure that data generated by WQB, PPWB and laboratories in the Federal/Provincial Agreements are of good and comparable quality.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT:*** *1982 09* **END/FIN:** *ongoing*

## 0302-7

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**IJC quality control studies**

Provide five interlaboratory quality control comparison studies to laboratories in the Great Lakes Basin that support the IJC-Canada U. S. Great Lakes Quality Agreement.

Financing/*Financement:* Environment Canada, Conservation and Protection

$2 000 000

**START/*DÉBUT:*** *1978 04* **END/FIN:** *ongoing*

## 0302-8

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**LRTAP interlaboratory quality control studies**

Define and improve the quality of data generated by laboratories that provide data to the federal/provincial LRTAP program.

Financing/*Financement:* Environment Canada, Conservation and Protection

United States Environmental Protection Agency

Lockheed Engineering & Sciences Company

$1 000 000

**START/*DÉBUT:*** *1980 04* **END/FIN:** *ongoing*

## 0302-9

Badakhshan, A
Irvine, G
(403) 220-4799

University of Calgary; Chemical & Petroleum Engineering Dept.

**Pilot plant studies on drinking water treatment by ozonation**

To find the effect of ozonation in place of chlorination on the formation of tritratromethanes in the course of treatment of the City of Calgary dinking water.

Financing/*Financement:* Alberta Environment

University of Calgary

City of Calgary Water Works

$100 000

**START/*DÉBUT:*** *1983 07* **END/FIN:** *1986 06*

## 0302-10

Baddaloo, E
(403) 427-3943

Alberta Environment

**Fate of contaminants - Athabasca River**

To determine threshold values for the human perceptions of taste and odour for representative chemical compounds identified as possibly being responsible for off-flavours in fish flesh.

Financing/*Financement:* Alberta Environment

$50 000

**START/*DÉBUT:*** *1985 06* **END/FIN:** *1987 03*

## 0302-11

Baker, J
(519) 885-1211

University of Waterloo; Institute for Groundwater Research; Dept. for Earth Sciences

**The origin and distribution of methane in the Alliston sand aquifer**

To identify both the origin of methane in the Alliston sand aquifer and the goechemical and hydrogeological factors controlling its distribution.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$63 200

**START/*DÉBUT:*** *1987 11* **END/FIN:** *1990 10*

## 0302-12

Baxter, R
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Reductive dehalogenating environmental contaminants**

To evaluate the role of reductive processes (including but not limited to dehalogenation) in the degradation of environmental contaminants using sediments from representative lakes in Jack Lake study area MODLES and elsewhere as appropriate.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT:*** *1987 04* **END/FIN:** *1992 03*

## 0302-13

Beauchamp, E
Kachanoski, G
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Crop management & nitrate contamination of groundwater with sandy soils used for tobacco production**

Includes - quantification of nitrate leaching to groundwater with a corn crop with the effects of applied fertilizer N, tillage practices and irrigation practices.

Financing/*Financement:* Agriculture Canada, Tobacco Diversification Plan

$400 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1992 03*

## 0302-14

Bobba, A
(416) 336-4916

Rivers Research Branch; National Water Research Institute; Environment Canada

**Watershed models**

To develop and apply watershed acidification models for simulation of the pathway and fate of nitrate and other pollutants in the Canadian watersheds. To calibrate and verify the models with existing water and soil chemistry data. Coupling the expert system to the watershed hydrological model.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$275 000

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *1990 03*

## 0302-15

Bonn, F
Perras, S
(819) 821-7180

Université de Sherbrooke; CARTEL

**Mesure de pollution diffuse (sol et éléments fertilisants) causée par l'érosion hydrique des surfaces en culture.**

Connaître la perte potentielle en sol et en éléments fertilisants causée par l'érosion hydrique des surfaces en culture à l'échelle d'une parcelle et de son bassin versant. La méthode développée vise l'utilisation de données multisources telles que les images satellitaires et les modèles numériques d'élévation gérées à l'aide d'un système d'information à références spatiales.

Financing/*Financement:* Conseil des recherches en argoalimentaire et pêcheries du Québec

$45 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1991 03*

## 0302-16

Booty, W
(416) 336-4718

Rivers Research Branch; National Water Research Institute; Environment Canada

**Aquatic ecosystem modelling**

Watershed acidification models assessment for RMCC report. Conversion of watershed acidification model to a watershed contaminants model. Develop and apply a hydrogeochemical model to predict the fate of toxic chemicals for the Athabasca River study.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$90 000

**START/*DÉBUT*:** *1988 08* **END/*FIN*:** *1990 02*

## 0302-17

Borstad, G
(604) 656-5633

G.A. Borstad Associates Ltd.

**Remote sensing and surface data in Barkley Sound, support to 1987 marine salmon survival program**

Analysis of remote sensing data, mapping of phytoplankton chlorophyll-a by fluorescence, descriptive oceanography of Barkley Sound, Vancouver Island. Final report delivered to DFO, April 1988.

Financing/*Financement:* Department of Fisheries and Oceans Canada

$25 000

**START/*DÉBUT*:** *1987 08* **END/*FIN*:** *1988 04*

## 0302-18

Borstad, G
(604) 656-5633

G.A. Borstad Associates Ltd.

**Compact airborne spectrographic imager (CASI) - software and applications development**

Development of software for the CASI; calibration, analysis and image processing. Development of applications, demonstration projects.

Financing/*Financement:* Itres Research Ltd.

GA Borstad Associates Ltd.

## 0302-19

Bourbonnière, R
(416) 336-4547

Rivers Research Branch; National Water Research Institute; Environment Canada

**Natural and anthropogenic organics related to oil sands development**

Initiate study by participation in multi-disciplinary reconnaissance program in the Athabasca River area. Complete committments to LRTAP Natural Acidity (publication).

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1993 03*

## 0302-20

Boyce, F
(416) 336-4921

Lakes Research Branch; National Water Research Institute; Environment Canada

**Assessment of sediment trap studies 1985-89**

To summarize report on sediment trap studies undertaken in Lake St. Clair, Lake Ontario, Hamilton Harbour and hydraulics flume 1985-89. To test different sediment trap designs under controlled conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0302-21

Bradbury, W
(416) 595-3183

Faculty of Medicine; University of Toronto

**Field Trials of Developed DNA Probes for Determining Bacterial Pollution Source Inputs**

To determine the specificity in field trials of developed DNA probes (human, goose, gull) to trace and quantitate the sources of pollution at the Toronto Harbour Front.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$33 600

**START/*DÉBUT*:** *1986 10* **END/FIN:** *1987 11*

## 0302-22

Brindle, I
(416) 688-5550

Brock University; Dept. of Chemistry

**Development of an automated HPLC system for the extraction and determination of multiresidues from water samples**

To develop an automated High Pressure Liquid Chromatographic (HPLC) System method to replace the use of liquid/liquid extraction and improve the automation of solid phase extraction techniques for the analysis of organochlorine, carbonate, triazine and organophosphate compounds in water.

Financing/*Financement:* Ontario Ministry of Environment

$154 450

**START/*DÉBUT*:** *1988 06* **END/FIN:** *1991 06*

## 0302-23

Brown, D
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Water quality alert levels for the Red River at the international boundary (Emerson)**

Formulation of site specific water quality alert levels to assist the international Red River Pollution Board of the International Joint Commission in the water quality surveillance of the Red River.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

$3 000

**START/*DÉBUT*:** *1984 11* **END/FIN:** *1987 01*

## 0302-24

Brown, D
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Pesticide levels in agricultural watersheds in Manitoba - (Stephenfield Reservoir)**

To identify concentrations and determine use impacts of agricultural pesticides in Manitoba watersheds. The monitoring and evaluation is ongoing and is being carried out in consultation with several provincial government and federal government agencies.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Environment Canada, Conservation and Protection

Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT*:** *1987* **END/FIN:** *1989 00*

## 0302-25

Brown, D
Goldsborough, L
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Impact of the forestry herbicide glyphosate on aquatic environment**

To determine the aquatic impacts of the aerial spraying of forestry herbicides within Manitoba. The primary focus is on the herbicide glyphosate and its effects on algal periphyton, emergent vegetation and submergent vegetation.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Canada/Manitoba Forest Renewal Agreement

$209 500

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1990 03*

## 0302-26

Brown, S
(613) 545-6122

Biology; Queen's University

**Paleolimnology and the paleoecology of lakes**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$3 600

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0302-27

Brownlee, B
(416) 336-4706

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in rivers**

Research on improved methods of measuring and modelling transport of contaminants on suspended particulate matter in rivers. The emphasis will be on oil sands related

contaminants (PAHs and related compounds) in the Athabasca River.

Financing/*Financement:* Environment Canada, Conservation and Protection

$700 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1994 03*

## 0302-28

Bruton, J
(416) 336-4922

Rivers Research Branch; National Water Research Institute; Environment Canada

**Expert systems analyses of remote in-situ basin data**

To conduct research directed towards the applications of expert systems (specifically DADS and RAISON) to both remotely acquired optical data and existing in-situ data collected over and/or in basins.

Financing/*Financement:* Environment Canada, Conservation and Protection

$500 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1994 03*

## 0302-29

Bukata, R
(416) 336-4670

Rivers Research Branch; National Water Research Institute; Environment Canada

**Remote sensing of river systems and basins**

To conduct through both experimental and theoretical research, studies of water quality in rivers and lakes, groundwater flow in freshwater basins, and remote sensing of aquatic resources on local and/or global basis.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1999 03*

## 0302-30

Burnison, B
(416) 336-4706

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of organic contaminants on microbial activities in natural waters**

To determine the effect of organic contaminants on bacterial productivity in various lakes. To determine the effect of organic contaminants on bacterial heterotrophy in various lakes. To further characterize the chemical composition of previously isolated DOC fractions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$450 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1992 03*

## 0302-31

Carey, J
(416) 336-4693

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant pathways in receiving waters**

To identify factors controlling bioaccumulation of atmospheric contaminants in lake organisms. Investigate contaminant transport in Fraser River estuary. Begin study on fate and effect of pulp mill related chlorinated organics in receiving waters. Evaluate adverse effects of pulp mill effluents on fish (DFO-Hodson). Investigate processes controlling fate of TCMTB in Fraser River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$650 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1992 03*

## 0302-32

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Modèle biogéochimique de la dynamique du soufre dans un écosystème boréal (Lac Laflamme, Forêt Montmorency).**

Production d'un modèle biogéochimique de la dynamique du soufre dans un écosystème recevant des précipitations acides. Quantification des principaux réservoirs de soufre dans la végétation terrestre, les sols, les sédiments et les eaux. Identification des principales formes chimiques. Mesure des flux de soufre entre les réservoirs biotiques et abiotiques. Formulation d'un modèle mathématique d'entrée-sortie du soufre dans un écosystème boréal.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$45 000

## 0302-33

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Biogéochimie de l'interface eau-sédiment**

Caractérisation et quantification du transport de substances dissoutes à l'interface eau-sédiment des lacs. Appliquer ces études au transport de substances nutritives (P, N, Si) et toxiques (métaux traces) entre les sédiments superficiels et la colonne d'eau. Préciser le rôle des invertébrés benthiques dans le transport des substances dissoutes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$35 000

## 0302-34

Charlton, M
(416) 336-4758

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effectiveness of pollution abatement in Hamilton Harbour**

To determine effects of recent abatements at Hamilton STP as a way of finding total reductions needed. Begin study on zinc availability under high and low oxygen conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$540 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0302-35

Chau, A
(416) 336-4653

Research and Applications Branch; National Water Research Institute; Environment Canada

**QA for the Canadian national pulp mill dioxin monitoring program**

To form and chair a Dioxin QA Committee (DQAC) to develop and implement a QA program and to advise DOE Dioxin Task Force and the Canadian Pulp and Paper Association on data quality.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0302-36

Chau, Y
(416) 336-4707

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biochemical indicators for studying metal pollution**

Use of metallothioneins (metal binding proteins) and 'Total Nucleotides' in biota to study metal stress and environmental health. Investigation of problem metals in the Athabasca River by analysis of sediment and fish samples.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0302-37

Cheam, V
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Development of liquid chromatography (LC) methodology for analysis of environment samples**

To develop an ion chromatographic method for determination of organic acids. Investigate application of LC for pulp and paper effluents analysis.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *ongoing*

## 0302-38

Chieng, S
(604) 228-4426

University of British Columbia

**Effects of farm drainage systems on nutrient loading in ground and drainage waters**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT*:** *1986*

## 0302-39

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of phenol and the chlorinated phenols**

In support of the Prince George burn experiment, methods were developed by ion chromatography for the determination of phenol, the monochlorophenols, the dichlorophenols, the trichlorophenols, the tetrachlorophenols and pentachlorophenol. For water samples, the advantages of this method are speed and cost since determinations are made from direct injections, without sample preparation. As such, the method MDCs range 0.1 - 2.0 mg/L.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0302-40

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Complexing capacity of water**

Literature study and preliminary work is underway to develop a method for determining the bio-available copper, apart from the total copper in a water sample.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0302-41

Clark, M
(604) 387-9947

British Columbia Minsitry of Environment & Parks

**Preservation study for NO2, NO3, NH3**

Current preservation techniques are being re-evaluated. Also, chemical preservation methods will be evaluated for samples which cannot be sent to the lab inside the three day window.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0302-42

Clark, M
(604) 387-9947
British Columbia Ministry of Environment & Parks

**Determination of cyanate**

Method for routine determination of cyanate in all water samples has been developed by ion chromatography, by direct injection and conductivity detection. The method MDC is 0.1 mg/L.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0302-43

Clark, M
(604) 387-9947
British Columbia Ministry of Environment & Parks

**Determination of PQ-8 (copper-8)**

Original methods have been developed by ion chromatography for all types of water samples. The method MDC is 5 ug/L (ppb), but can be lowered using extraction, if required.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0302-44

Cluis, D
(418) 654-2535
Université du Québec; INRS-eau

**Evaluation de la contribution à la contamination des eaux causées par l'élevage bovin.**

A court terme développer un logiciel permettant d'évaluer la contribution relative des amas de fumier, des eaux usées de laiteries de ferme et des cours d'exercice à la pollution de l'eau dans une représentation graphique absolue et relative. A moyen terme, évaluer les contributions de l'épandage des fumiers et de l'érosion du sol et cartographier les exploitations à hauts risques.

Financing/*Financement:* Québec, ministère de l'Environnement

$95 276

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1991 03*

## 0302-45

Cluis, D
(418) 654-2535
Université du Québec; INRS-eau

**Couplage quantité-qualité du modèle hydrologique conceptuel CEQUEAU**

Etablir la relation entre l'utilisation du territoire et la qualité de l'eau des rivières qui le drainent. Le but est de juger l'efficacité relative des interventions agricoles, municipales et industrielles sur la qualité du milieu récepteur. Modèle opérationnel sur micro IBM-PC.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$32 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1988*

## 0302-46

Cluis, D
(418) 654-2535
*Université du Québec; INRS-eau*

**Analyse des séries chronologiques.**

Etude des structures et des relations entre séries chronologiques en sciences de l'eau. L'objectif est d'aider à l'analyse de phénomènes environnementaux complexes: ex: pluies acides: relation entre paramètres précipitation, lac exutoire; efficacité entrée-sortie des usines d'assainissement municipales.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$60 000

**START/*DÉBUT***: *1980*

## 0302-47

Cluis, D
(418) 654-2535
Université du Québec; INRS-eau

**Détection des tendances en qualité de l'eau et des effluents - dépassement de normes.**

Suivi environnemental, efficacité des interventions. Un logiciel de traitement sur IBM-PC a été développé.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$110 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1988*

## 0302-48

Coakley, J
(416) 336-4881
Lakes Research Branch; National Water Research Institute; Environment Canada

**Sources and transport of contaminated fine sediments, Great Lakes and St. Lawrence system**

To develop and field test means of identifying sources, transport rates and patterns of contaminated fine sediments and apply to specific cases in the Lower Great Lakes and St. Lawrence River system.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0302-49

Couillard, M
(514) 521-4927
Environnement Illimité Inc

**Evaluation de la faisabilité d'utiliser l'hydro-acoustique pour suivre les sédiments en suspension dans l'eau.**

Evaluer si l'hydro-acoustique permet de suivre le panache de diffusion de sédiments en suspension dans l'eau. Evaluer si l'hydro-acoustique permet de quantifier les concen-

trations de sédiments dans l'eau. Disponible en janvier 1988.

Financing/*Financement:* Hydro-Québec

$3 500

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1987 12*

## 0302-50

Couture, M
(418) 724-1761
Université du Québec à Rimouski; Département d'océanographie

**Remontées d'eau froide dans la région de Pointe-des-Monts au Québec**

Reproduire, à l'aide d'un modèle à gravité réduite, les remontées d'eau froide observées sur images-satellites pour certaines directions privilégiées des vents.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

## 0302-51

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Amélioration de l'outil bioanalytique dans le processus d'évaluation de la toxicité des contaminants.**

Le projet consiste à préciser un pattern de procédures de dépistage permettant une interprétation environnementale de données de toxicologie relative. Trois niveaux d'informations complémentaires aux données de toxicité sont identifiés et une série de procédures sélectionnées pour chacun d'eux: niveau de l'effluent (dégradation, fractionnation), niveau du milieu récepteur (eau de dilution) et niveau du biotope (récupération). Pour ces trois niveaux d'informations, la pertinence écotoxicologique, l'approche utilisée et quelques résultats obtenus avec un effluent de fabrique de pâtes et papiers sont discutés.

Financing/*Financement:* Québec, ministère de l'Environnement

$6 500

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1987 09*

## 0302-52

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Mode d'action de substances altéragènes au niveau communauté phytoplanctonique**

Les objectifs de la présente demande visent à étudier les mécanismes d'acclimatation de la communauté microbienne aquatique suite à des déversements de substances altéragènes. On vise à comprendre comment des modifications dans des propriétés structurelles (chl-a, somme des adénylates, ADN, dénombrement, structure des populations) et fonctionnelles (P/B, charge énergétique, ATP/AMP, ATP/ADP) de communauté microbienne indigène peuvent être associés à un processus d'acclimatation en modulant les taux de croissance et la structure de la communauté indigène. A long terme, on définira une approche écotoxicologique pour déterminer les risques environnementaux des déversements de substances toxiques au niveau des producteurs primaires.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$5 000

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1987 05*

## 0302-53

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Etude de faisabilité pour la réalisation d'un biotest algal à partir de réactif biologique lyophilisé.**

La lyophilisation (séchage à froid) est proposée comme une technique pratique et abordable pour la conservation de souches destinées à la réalisation de bioessais. L'efficacité de certaines conditions d'incubation préalables à la lyophilisation est étudiée pour améliorer la résistance au séchage à froid de cultures de Selenastrum capricornutum, une espèce largement utilisée dans les laboratoires d'Environnement Canada pour la détection des dangers reliés au déversement de substances toxiques. L'influence de la procédure de lyophilisation, de la solution de reconstitution et du mode de reconstitution sur l'activité et le taux de récupération de cultures lyophilisées est précisée.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$33 268

**START/*DÉBUT***: *1988 06* **END/*FIN***: *1989 06*

## 0302-54

Couture, P
Campbell, P
(418) 654-2578
Université du Québec; INRS-eau

**Sensibilité du saumon atlantique (stade: alevins vésiculés) aux conditions physico-chimiques acides (présence et absence d'aluminium)**

Ce projet a pour objectif de vérifier la sensibilité du saumon atlantique (stade de développement : alevins vésiculés) aux conditions physico-chimiques acides susceptibles de se produire au printemps dans les rivières de la Côte Nord (Québec) lors de la fonte des neiges. Durant une période de traitement (pH 5, avec ou sans Al) de 17 jours, et une période de dépuration subséquente de 18 jours, on a suivi l'accumulation de l'aluminium et la survie chez les alevins de saumon. De plus une expérience d'extraction d'aluminium à l'EDTA a été réalisée afin de discriminer entre les quantités d'aluminium adsorbé et absorbé.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$31 137

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1987 05*

## 0302-55

Craig, G
(416) 671-2600
Beak Consultants Ltd.

**Literature review - acute toxicity in municipal sewage effluent**

To estimate the magnitude of acute toxicity problems in municipal STP effluent. To determine the most prevalent chemical parameters causing acute toxicity to aquatic organisms.

Financing/*Financement:* Ontario Ministry of Environment

$40 000

## 0302-56

Craig, W
(613) 225-2447

Paracel Laboratories Ltd.

**Solid phase extraction of triazines and organophosphorus compounds from water**

To determine if the use of solid phase extraction for the extraction of triazines and organophosphorus compounds is an appropriate analytical procedure. To identify which parameters, if any, of the methodology need to be studied further, or optimized, before its adoption as a routine analytical technique.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$52 500

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 03*

## 0302-57

Cross, S
(604) 655-3255

Aquametrix Research Ltd.

**Waste material dispersion characteristics and deposition rates under B.C. salmon farming operations**

To provide information on deposition rates and composition of waste material (fecal/food waste) from a moderate sized salmon farm, to examine the dispersion of this material around the study farm, and to estimate the percentage of food material lost as a result of feeding practices at the participating farm.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$6 100

**START/*DÉBUT***: *1987 11*

## 0302-58

Cross, S
(604) 655-3255

Aquametrix Research Ltd.

**Bonaparte River nonpoint pollution study**

To identify the areas of critical phosphorus loading and erosion adjacent to the Bonaparte River between Thompson River and Chasm Creek.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$6 164

**START/*DÉBUT***: *1987 11*

## 0302-59

Crowe, A
(416) 336-4585

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contamination transport in granular aquifers**

To investigate the physical, chemical and biological controls on contaminant transport in granular aquifers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada

**START/*DÉBUT***: *1979 10* ***END/FIN***: *ongoing*

## 0302-60

Dalrymple, R
(613) 545-6172

Geological Science; Queen's University

**Sedimentology of modern shallow marine and ancient cratonic sediments**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$42 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0302-61

Dalrymple, R
(613) 545-6172

Queen's University; Geological Sciences

**Sedimentology and chronology of sediments in the Cataraqui Lagoon (Kingston) - implications for lake-level fluctuations**

none available

Financing/*Financement:* Queen's University

$3 030

**START/*DÉBUT***: *1988 12* ***END/FIN***: *1989 11*

## 0302-62

Daniels, S
(416) 336-4768

Research and Applications Branch; National Water Research Institute; Environment Canada

**Electrokinetic and enzymatic detection of sub-cellular toxic and mutagenic effects**

To establish the laboratory capability of electrophoretically detecting nuances of genetic material (DNA). To evaluate the ability of these procedures to detect genetic components produced by selective enzymatic lysis.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0302-63

Day, K
(416) 336-4659

Rivers Research Branch; National Water Research Institute; Environment Canada

**Methods to determine the toxicity, fate and effects of contaminants in stream ecosystems**

To conduct research on the development of laboratory and in situ toxicity tests to determine the effects of ambient concentrations of non-point source contaminants (particularly pesticides) on stream ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

Ontario Ministry of Environment

$400 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1992 03*

## 0302-64

de la Noüe, J
Lavoie, M
(418) 656-2952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Filtre biologique pour circuit fermé d'élevage aquicole**

Mettre au point un système efficace de filtration biologique des effluents de bassins d'élevage de poisson. Concevoir et réaliser un filtre biologique à bactéries immobilisées; accélérer la mise en condition d'un tel filtre; optimiser les paramètres d'opération.

Financing/*Financement:* Conseil des recherches et services agricoles du Québec

Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

$71 528

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1990 12*

## 0302-65

Delisle, C
(514) 340-4962

Ecole polytechnique de Montréal; Département de génie civil

**Suivi écologique de la qualité de l'eau potable**

La truite arc-en-ciel est un poisson communément reconnu dans les tests de toxicité au Canada. Le but de ce projet est de suivre le comportement de natation de ce poisson selon la qualité de l'eau brute utilisée à l'usine de filtration de Sainte-Rose de Laval. L'évitement possible de cette eau dépendamment des polluants présents constitue le suivi de la qualité de l'eau.

Financing/*Financement:* Ville de Laval

$15 000

**START/*DÉBUT*:** *1987* **END/FIN:** *1988*

## 0302-66

Delisle, C
(514) 340-4962

Ecole polytechnique de Montréal; Département de génie civil

**Evolution dans le temps et dans l'espace de la qualité de la neige usée et de l'eau de ruissellement de pluie du territoire de la ville de Montréal.**

Au cours des dernières années, plusieurs études furent réalisées sur les répercussions écologiques des déversements de la neige usée au fleuve Saint-Laurent ou bien sur la qualité de ces neiges. Le but de ces études est de comparer l'impact de ces déversements avec les eaux de ruissellement pluvial en milieu urbain.

Financing/*Financement:* Ville de Montréal

$50 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988*

## 0302-67

Delisle, C
(514) 340-4962

Ecole polytechnique de Montréal; Département de génie civil

**Ecologie du lac du Cratère, Nouveau-Québec**

Ce lac profond de 263, 4 mètres est unique, puisqu'il n'a ni effluent ni affluent, étant fermé par des parois qui s'élèvent à des hauteurs variant de 67 à 163 mètres. Ce lac représente un écosystème relativement simple et théoriquement extrêmement sensible à la qualité des précipitations. Le but est donc d'établir l'état écologique de ce site unique pour éventuellement en suivre l'évolution. Toutes les espèces seront échantillonnées et identifiées, en particulier l'omble chevalier (Salvelinus Alpinus) la seule population de poissons du lac. L'écologie de cette espèce et des hypothèses quant à son origine seront étudiées.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$20 000

**START/*DÉBUT*:** *1987* **END/FIN:** *1988*

## 0302-68

Delorme, L
Harper, N
(416) 336-4788

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of climate on water quality of Canadian lakes**

To evaluate the relationship between climate and water quality and certain organisms using proxy data, by: characterizing fossil ostracodes found in shallow lakes; interpreting chemical, physical and climate variables of shallow lakes from ostracodes; further understanding the use of ostracodes as paleolimnological and paleoclimatic indicators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$500 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1993 03*

## 0302-69

Désy, J
Dufour, J
(418) 545-5346
Université du Québec à Chicoutimi; Département des sciences humaines

**Guide cartographique régionalisé des stress environnementaux au Québec.**

De très nombreuses sources d'information factuelles existent sur la distribution spatiale des stress environnementaux, des espaces conservés et à conserver sur le territoire québécois. Malheureusement, ces informations sont fragmentées, éparses, peu accessibles dans bien des cas, sinon soigneusement cachées. Ces synthèses cartographiques régionales veulent pallier à ces lacunes en fournissant une information de qualité scientifique, accessible et vulgarisée aux citoyen-nes, tout en contribuant à la formation de stratégies régionales de conservation.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science
Canada, ministère de l'Environnnment
Confédération des syndicats nationaux
$123 000
**START/*DÉBUT***: *1986 06* ***END/FIN***: *1989 05*

## 0302-70

Dixon, D
(519) 885-1211
University of Waterloo

**Verification studies of a bioconcentration-based model for predicting pulse-exposure toxicity of organic contaminants to fish**

The primary objective of this research is to test the capability of the existing model to predict the acute and sublethal toxicity of organic contaminants to fish across a wide range of pulse-exposure regimes. The ultimate objective of this work is to develop a scientific basis for developing water quality guidelines which are sensitive to pulse and fluctuating toxicant exposures. More specific objectives include: examination of the relationship between toxicant body burdens and biological response (true dose-response) and examination of body size as a modifying factor of toxicokinetics and pulse-exposure toxicity.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$40 200
**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 04*

## 0302-71

Dixon, G
(519) 885-1211
University of Waterloo; Department of Biology

**Chronic toxicity of thocyanate to freshwater fish for the development of a water quality criterion**

To obtain sufficient data on the chronic toxicity of thiocyanate to fish to establish a water quality criterion. To examine the toxicity of short-term pulse exposure of SCN- to fish. To apply the lab derived biochemical and histological indicators of SCN- impact on fish in the White River system.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$111 700
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0302-72

Donelan, M
(416) 336-4879
Research and Applications Branch; National Water Research Institute; Environment Canada

**Transfer of toxic gases**

To establish the dependence of the transfer of gases at the air-water interface on the descriptions of the interface. Report by Donelan and Merzi, 1987 - Gas Transfer at Air-Water Interfaces, NWRI contribution 87-157.

Financing/*Financement:* Environment Canada, Conservation and Protection
$41 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 04*

## 0302-73

Drapeau, A
(514) 340-4816
Ecole polytechnique de Montréal; Département de génie civil

**Pyro-spectrométrie de masses multiples et informatisation des données.**

Développement, mise au point et application pratique d'une technique originale pour fins d'identification rapide et automatisée de souches microbiennes inconnues à l'aide de la pyrolyse, la spectométrie de masses multiples et l'ordinateur. METHODOLOGIE: Des souches microbiennes préparées et lyophilisées sont analysées à l'aide de fractionnement thermique en pyrolyse directement à l'entrée de la source ionisante à impact d'électrons d'un spectomètre de masse de type quadrupole relié à un ordinateur avec sortie d'imprimante. Après assèchement par paliers successifs de la culture, le spécimen est porté à des paliers successifs de 500 à 750 degré C sous vide. La sonde est réchauffée séquentiellement à l'entrée de la source ionisante pendant 5 s à 800, 900 et 999 degré C.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
$15 400
**START/*DÉBUT***: *1987* ***END/FIN***: *1988*

## 0302-74

Dutka, B
(416) 336-4923
Rivers Research Branch; National Water Research Institute; Environment Canada

**Studies on toxicant activity in river sediments and water column**

Study the spatial distribution of toxicants in sediments and the role they play in, insitu microbial processes. Publish french version of revised methods manual. Provide national

and international advice on ecotoxicology-microbiology related to water and sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ministry of State for Science and Technology Biotechnology Program

Environment Canada, Parks

**START/*DÉBUT*:** *1988 04* **END/FIN:** *ongoing*

## 0302-75

El-Shaarawi, A
(416) 336-4584

Rivers Research Branch; National Water Research Institute; Environment Canada

**Statistical assessment of LRTAP data**

To continue statistical developmental works on: the estimation of the population characteristics of LRTAP lakes, and the development of a statistical regional LRTAP model.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$300 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0302-76

Esterby, S
(416) 336-4790

Lakes Research Branch; National Water Research Institute; Environment Canada

**Statistical methods for water quality studies**

Develop spatial/temporal models and methods for censored data (non-detects). Develop methods for modelling spatial components, in monitoring or research data, which will allow the estimation of trends without the variability due to spatial heterogeneity. Application to Great Lakes and regional data, report March 1990. Review and evaluate methods for censored data with application to Niagara River data.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$220 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1993 03*

## 0302-77

Evans, M
(306) 975-5310

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Limnology of Great Slave Lake**

To collect preliminary data on zooplankton and benthic community structure in a selected region of Great Slave Lake.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1989* **END/FIN:** *ongoing*

## 0302-78

Evans, R
(705) 748-1273

Environment & Resource Studies; Trent University

**Technical expertise to develop/apply sediment/soil bioassays**

none given

Financing/*Financement:* Ontario Ministry of Environment

$53 685

**START/*DÉBUT*:** *1988 04*

## 0302-79

Ferguson, K
(604) 666-2399

Environment Canada; Conservation and Protection; Environmental Protection

**The export of nutrients from surface coal mines**

To quantify the release of nitrogen and phosphorus from surface coal mines in southeast British Columbia. To develop a predictive model for use at other minesites in Canada. Draft report prepared, final report by March 1988.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Industry

$130 000

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 03*

## 0302-80

Fitchko, J
(416) 671-2600

IEC Beak Consultants Ltd.

**Biological Indicator System to Identify Genotoxicity of In-Place Pollutants**

To develop a reliable biological indicator test system to evaluate the biological effects-genotoxicity of in-place pollutants on chironomids.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$10 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1987 03*

## 0302-81

Fortin, M
(519) 886-0502

Ecologistics Limited

**To evaluate beach use benefits related to water quality improvements**

To develop an evaluation procedure to forecast potential benefits of propsed beach water quality rehabilitation measures. The study objectives are to: monitor beach use and beach attributes (including water quality) over time at several sites; complete a user survey; develop, verify and compare contingent valuation and travel cost models for beach

recreation; and incorporate model results into a beach use planning tool to evaluate water quality improvements.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$79 100

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0302-82

Francis, R
(902) 368-5038

Government of Prince Edward Island; Community and Cultural Affairs

**West River Basin Study**

Hydrogeological assessment to determine quality and quantity of water for the Greater Charlottetown area.

Financing/*Financement:* Prince Edward Island, Community and Cultural Affairs

Environment Canada, Conservation and Protection

Charlottetown Water Commission

$250 000

**START/*DÉBUT*:** *1983 04* **END/FIN:** *1989 06*

## 0302-83

Fraser, A
(416) 336-4919

Rivers Research Branch; National Water Research Institute; Environment Canada

**Aquatic/terrestrial interactions and LRTAP resources at risk**

To determine the degree of aquatic resources at risk in provinces of Canada, participating in the development of the 1989/90 LRTAP assessment report for the RMCC. To extend the range and scope of the expert systems development of the RAISON system beyond LRTAP to environmental issues in Canada.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$300 000

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1990 03*

## 0302-84

Fritz, P
(519) 885-1211

University of Waterloo; Department of Earth Sciences

**Sulphur and Oxygen Isotope Composition in a Watershed and their role in Acid Rain Sulphur Cycle**

To gain a better understanding of the fate and biochemical history of sulfate between fallout and run-off in a terrestrial watershed. Specifically, to assess the chemical processes affecting the isotopic composition of the soil sulphur compounds.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$32 500

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1989 04*

## 0302-85

Gagnon, C
(418) 723-6470

Université du Québec à Rimouski; Département d'océanographie

**Adsorption de polluants organiques et inorganiques sur diverses argiles en suspension**

Les argiles dans le milieu marin sont d'excellents adsorbants de polluants. Alors, on déterminera les capacités de quelques argiles à retirer de la phase aqueuse divers polluants organiques et inorganiques. Ensuite il sera intéressant d'évaluer les interactions, entre eux, des divers polluants sur la capacité d'adsorption. Projet de maîtrise.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$12 500

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1988 12*

## 0302-86

Gangbazo, G
Piché, I
(418) 644-3592

Ministère de l'Environnement; Direction de l'assainissement agricole

**Répercussions environnementales des polluants chimiques des cours d'exercice de bovin sur la qualité des eaux de surface.**

Evaluer les charges saisonnières d'azote et de phosphore des eaux de ruissellement provenant des cours d'exercice de bovin. Evaluer les répercussions environnementales de tels rejets de polluants au moyen de bioessais. Trois cours d'exercice dont deux en sol et une en béton font l'objet de l'étude.En fin d'année 1990, une des trois cours d'exercice sera dotée d'un filtre végétal.

Financing/*Financement:* Québec, ministère de l'Environnement

$60 000

**START/*DÉBUT*:** *1989 10* **END/FIN:** *1992 10*

## 0302-87

Gangbazo, G
Piché, I
(418) 644-3592

Ministère de l'Environnement; Direction de l'assainissement agricole

**Répercussions environnementales des polluants chimiques des tas de fumier sur la qualité des eaux de surface.**

Evaluer les charges saisonnières et annuelles d'azote et de phosphore des eaux de ruissellement provenant des tas de fumier et du bassin versant où ils sont situés. Evaluer les répercussions environnementales de tels rejets de polluants au moyen de bioessais. Trois tas de fumier -dont deux avec montée conventionnelle et un avec évacuateur souterrain- font l'objet de l'étude. Les eaux de ruissellement sont échantillonnées une fois par semaine.

Financing/*Financement:* Québec, ministère de l'Environnement

$60 000

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1991 10*

## 0302-88

Gangbazo, G
Piché, I
(418) 644-3592
Ministère de l'Environnement; Direction de l'assainissement agricole

**Effets des pratiques conventionnelles d'épandage du lisier de porc sur la qualité des eaux.**

Mesurer dans l'eau de ruissellement et dans l'eau de drainage, les concentrations et les charges d'azote et de phosphore résultant des pratiques conventionnelles d'épandage du lisier de porc sur des champs de maïs et des prairies. Aménagement de l8 parcelles de 3m x 15m, la moitié de celles-ci étant des champs de maïs, l'autre moitié étant des prairies. Toutes les parcelles sont drainées par voie souterraine. Lors de chaque événement pluvieux ou fonte, les eaux de ruissellement et de drainage sont échantillonnées séparément. Le prélèvement d'azote et de phosphore par les cultures sera aussi évalué ainsi que l'acculumation de ces éléments dans le sol.

Financing/*Financement:* Québec, ministère de l'Environnement

$236 000

**START/*DÉBUT*:** *1989 01* **END/FIN:** *1992 01*

## 0302-89

Gehr, R
Cailas, M
(514) 398-6861
Université Mc Gill; Département de génie civil

**Statistical analysis of biodegradation, with emphasis on respirometry**

The biodegradation of materials is conveniently measured by respirometry. Automated instruments enable one to acquire closely-spaced time-dependent data. Methods for statistical analysis data are not well developed. The objective of this project is to develop statistical methods to a) rigously determine the parameters of a suitable model to adeq ately describe the data, and b) to compare data sets obtained under various predetermined conditions. Excellent progress has been made so far, and it appears that rate models, rather than cumulative models, are most appropriate. Comparisons by means of the Jackknife procedure offer the most promise. Also plan to develop an automated respirometer with advanced control features.

Financing/*Financement:* Fonds institutionnel de recherche

Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$31 400

**START/*DÉBUT*:** *1983*

## 0302-90

Gehr, R
Soponkanaporn, T
(514) 398-6861
Université McGill; Département de génie civil

**Evaluation of polyelectrolyte behaviour and degradation by size exclusion chromatography (SEC).**

Polyelectrolytes, especially those which are acrymalide based, are widely used in water and wastewater treatment. This project involved the development of a chromatographic method - specifically chromatography - for assessing the molecular weight distribution of high molecular weight, cationic polyelectrolytes. This method was then used to study in particular the effects on the polyelectrolyte of chlorination, ozonation, and biodegradation. The method is now also available for studying changes in the polyelectrolyte through unit treatment processes, and it is hoped it will investigate full-scale applications in the near future. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$80 000

**START/*DÉBUT*:** *1985*

## 0302-91

Gilbert, R
(613) 545-6034
Geography; Queen's University

**Glaciomarine sedimentology of arctic flords**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$58 398

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 03*

## 0302-92

Gorman, W
(613) 545-6176
Geological Science; Queen's University

**Development of sampling techniques to evaluate concentrations of gases in ground water**

unavailable

Financing/*Financement:* Ontario Ministry of the Environment

$30 450

**START/*DÉBUT*:** *1984* **END/FIN:** *1986 00*

## 0302-93

Grove, G
(306) 975-5741
Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater technology transfer**

To undertake field and/or office investigations with emphasis on specific problems related to the transfer of groundwater technology developed by research studies in the Division. To provide advice and assess the technical soundness of the groundwater component of external investigations.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0302-94

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Inhibition de la production microbienne d'acide sulfurique dans les environnements miniers.**

Empêcher la génération biologique d'acides minéraux forts à partir de l'oxydation des sulfures métalliques (pyrite, pyrrhotine) dans les stériles et rejets miniers. Etude de l'adhérence bactérienne aux surfaces minérales.

Financing/*Financement:* Fonds personnel

## 0302-95

Halfon, E
(416) 336-4917
Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling the fate of contaminants in Lake Ontario in the Toronto waterfront area - environmental simulation**

Finish work on modelling toxic contaminants in the Toronto waterfront, report due in the fall of 1989. Model of toxic contaminants in Lake Ontario. Continue work on the development of an expert system for ranking, this requires assistance of contract computer programmers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment, Municipal Industrial Strategy for Abatement

Great Lakes Water Quality

$200 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0302-96

Hall, J
(519) 824-4120
University of Guelph; Department of Environmental Biology

**Quantification of Herbicides in Soil, Water and Plants Using Enzyme-Linked Immunosorbent Assay**

The development of an enzyme linked immunosorbent assay (ELISA) for the deteciton of trace levels of herbicides in soil, water and plants.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$66 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1989 06*

## 0302-97

Hamblin, P
(416) 336-4921
Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment dynamics of St. Lawrence River estuary**

To determine transport and fate of contaminated sediments in the St. Lawrence River estuary.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1993 03*

## 0302-98

Hanna, M
(416) 336-4780
Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of reoxygenation on the recolonization and survival ability of chironomids**

Determine the relationships between benthic invertebrate community structures and contaminants and how these relationships are affected by oxygen levels, and other physico-chemical variables, through a nearshore-offshore transect. Determine the effect of oxygenation on the recolonization by chironomids.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

**START/*DÉBUT*:** *1988 12* **END/FIN:** *1990 04*

## 0302-99

Hanna, M
(416) 336-4780
Lakes Research Branch; National Water Research Institute; Environment Canada

**Use of mussels as biosensors for contaminants in the St. Lawrence River**

Survey and assess the contamination (contaminant levels, sources, bioavailability and persistence) and health of native mussels in the St. Lawrence River between Lake St. Louis and Tadoussac. Exploit the data obtained from the various indicators of mussel health in order to recommend standardized procedures for establishing a biomonitoring network.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000

**START/*DÉBUT*:** *1989 02* **END/FIN:** *1992 03*

## 0302-100

Harper, P
Cloutier, L
(514) 343-6790
Université de Montréal; Département des sciences biologiques

**Emergence d'insectes dans les lacs soumis à l'acidification.**

Etude de l'émergence d'insectes aquatiques dans trois lacs de la Mauricie, dans le cadre du programme de surveillance continue des lacs soumis aux précipitations acides.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$10 000

## 0302-101

Harper, P
Cloutier, L
(514) 343-6790
Université de Montréal; Département des sciences biologiques

**Drainage agricole et répercussions sur la qualité des milieux aquatiques.**

Evaluation des pratiques d'aménagement des cours d'eau à des fins agricoles par l'étude des répercussions sur la faune benthique.

Financing/*Financement:* Conseil des recherches en argo-alimentaire et pêcheries du Québec

Québec, ministère du Loisir, de la Chasse et de la Pêche

$65 000 **END/*FIN*:** *1989 12*

## 0302-102

Harper, P
Cloutier, L
(514) 343-6790
Université de Montréal; Département des sciences biologiques

**Drainage agricole et qualité des milieux aquatiques.**

Evaluation des pratiques actuelles d'aménagement des cours d'eau à fins agricoles par l'étude des effets sur la faune benthique.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

Québec, ministère du Loisir, de la Chasse et de la Pêche

$65 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1989 12*

## 0302-103

Hebert, P
(519) 253-4232
Great Lakes Institute; University of Windsor

**Clam Caging Experiments using Elliptio Complanatus as Biomonitors for Toxic Contaminants in Water**

To assess the validity of using Elliptio Complanatus for monitoring water quality in the Great Lakes and to make recommendations on the use in situ populations of Lampsilis Radiata - a clam native to both the Great Lakes, rivers and other lakes in Ontario.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$18 700

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *1986 06*

## 0302-104

Hebert, P
Haffner, D
(519) 253-4232
Great Lakes Institute; University of Windsor

**Biological monitoring of organic contaminants in Lake St. Clair and the St. Clair River**

To develop and verify biomonitoring techniques for freshwater mussels, mayflies and macrophytes.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

$400 000

**START/*DÉBUT*:** *1986 05* **END/*FIN*:** *1989 05*

## 0302-105

Henry, G
Mackay, D
(416) 978-4019
Department of Chemical Engineering; University of Toronto

**The Fate of Hazardous Organic Compounds in Municipal Water Pollution Control Plants**

To develop a model and protocol for the prediction of fate of hazardous organic compounds in municipal water pollution control plants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$60 000

**START/*DÉBUT*:** *1984 07* **END/*FIN*:** *1987 08*

## 0302-106

Herbert, P
(519) 253-4232
Great Lakes Institute; University of Windsor

**Use of Aquatic Vegetation & Invertebrates to Monitor Chlorinated Hydrocarbons in Lakes Huron/Erie**

1. To examine the factors affecting the uptake of selected organic contaminants by clams. 2. To exmaine the usefulness of aquatic vegetation in monitoring selected organic contaminants. 3. To comduct laboratory experiments to calibrate uptake rates (ie the relationship between body burden and water concentrations) to provide a basis for interpreting field data. 4. To assess the concentration of toxic chemicals in major components of Lake St. Clair biota. 5. To refine fate and transport models.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$250 000

**START/*DÉBUT*:** *1986 05* **END/*FIN*:** *1987 05*

## 0302-107

Hindley, B
(416) 661-6600
Metropolitan Toronto & Region Conservation Authority

**Effects of Rural and Suburban Development on Surface Water Quality in the Upper Humber River**

1. To estimate sediment volumes and pollutant loadings from a forested, undisturbed watershed; an urban construction site; rural cultivated lands and stream bank erosion. 2. To estimate bacterial and suspended sediment loadings and the degree of water quality impairment to a stream from unrestricted livestock access.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$121 300

**START/*DÉBUT*:** *1985 07* **END/*FIN*:** *1987 10*

## 0302-108

Holloran, R
(416) 671-2600
IEC Beak Consultants Ltd.

**Sediment transport study**

To predict longshore and across-shore suspended and bedload transport rates for varying sediment particle sizes under a range of known environmental conditions (spatial and temporal varying currents, waves and bathymetry). This will permit assessment of the short-term and long-term fates of contaminated sediment particles from sources such as rivers, sewage treatment plants and lakefilling.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$97 700

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1989 03*

## 0302-109

Houston, A
(416) 688-5550
Brock University; Dept. of Biological Science

**Effects of chronic exposure to sublethal levels of heavy metal pollutants on physiological/biochemical activities of freshwater fishes**

Definition of maximal acceptable pollutant concentrations

Financing/*Financement:* Natural Sciences & Engineering Research Council

$36 382

## 0302-110

Howard, K
(416) 284-3336
University of Toronto; Scarborough Campus; Groundwater Research Group

**Development of a hydrologic model to predict the environmental fate of de-icing salts**

To develop a hydrologic salt & water balance model that will predict, on a catchment scale, the long-term environmental fate of many tens of thousands of tonnes of road de-icing chemicals applied annually to Ontario's highways, streets, paths & sidewalks. The model will be based on sound hydrologic principles & incorporate recent developments in our understanding of overland & shallow sub-surface contaminant flow processes (including mixing & ion exchange) ; consider application of NaCl, CaCl2 & consider the fate of Na & Ca, & Cl; be developed for a specific catchment(s), but will be sufficiently versatile & flexible for use in other catchments; predict long-term chemical changes of water quality in groundwaters, lakes & rivers; be developed for ease of use with the eventual user in mind.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$98 700

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 01*

## 0302-111

Hudson, H
(403) 450-5275
Alberta Research Council; Resource Technologies Dept.

**An evaluation of suspended and dissolved solids data bases for the South Saskatchewan River basin, Alberta**

To determine the applicability of existing suspended and dissolved solid data bases to the known water resource issues (quantity, quality, environmental issues etc.) in the South Saskatchewan River basin, Alberta. Report Sept. 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Alberta Research Council

$35 000

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1989 09*

## 0302-112

Hudson, H
(403) 450-5275
Alberta Research Council; Resource Technologies Dept.

**Regional sediment characteristics for Alberta**

To develop and present a regional synthesis of sediment data to demonstrate temporal and spatial variations and the nature of sediment transport characteristics for Alberta rivers. Draft report March 31, 1989, final report June 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Alberta Research Council

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1989 03*

## 0302-113

Jackson, R
(416) 336-4587
Rivers Research Branch; National Water Research Institute; Environment Canada

**Pesticide migration and fate in groundwater**

To investigate the transport and transformation of pesticide residues in groundwater.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$250 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1991 03*

## 0302-114

Jackson, T
(306) 975-5766
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Effects of toxic pollutants on microbial communities**

Complete the current experimental microbiology project involving sediments from Flin Flon area and Northern Manitoba. Perform a new experimental study of inhibitory and stimulatory effects of heavy metals (copper, cadmium, zinc) and selenium on microbial activities (including mercury transformations) in sediments, with emphasis on synergistic

and antagonistic interactions (i.e. increases and decreases in toxic effects resulting from exposure of microbes to mixtures of contaminants). Collect field samples from lake(s) near Flin Flon in late summer, and then perform and complete a series of experiments.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/*FIN*:** *1990*

## 0302-115

Jerome, J
(416) 336-4922

Rivers Research Branch; National Water Research Institute; Environment Canada

**Optical monitoring of suspended sediment transport in rivers**

To conduct through both experimental and theoretical optical research studies on river sediment transport and real colour displays of natural waters.

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1994 03*

## 0302-116

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Structure activity relationships of contaminants**

Determine toxicity data (microtox) of contaminants and develop structure activity equations.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0302-117

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants in Great Lakes system**

To identify sources, pathways and sinks of organic trace contaminants in Great Lakes system including St. Lawrence estuary.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$750 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1993 03*

## 0302-118

Kalff, J
Leggett, W
(514) 398-6467

Université McGill; Département de biologie

**Modelling limnological responses to the loading of nutrients and contaminants**

The limnological parameters that are studied include pelagical phyto and zooplankton biomass and size structure, the biomass of submerged macrophytes, abundance, sediment and planktonic bacteria, biomass and size-structure of zoobenthos, growth, biomass, size-structure and species composition of littoral fishes. These parameters are being studied in relation to nutrients, and in addition, are investigating the accumulation of a wide variety of heavy metal and organic contaminants in these limnological communities.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Donner

$385 050

## 0302-119

Kalinauskas, A
(416) 669-5334

Moniteq Limited

**Multispectral remote sensing techniques for past, present and future mapping of chlorophyll**

Simulate Landsat MSS and Landsat TM data using Programmable Multispectral Imager (PMI) data and correlate the simulated Landsat data with OME chlorophyll samples collected near simultaneously with the imagery. This correlation can then be used for historical, present and future derivations of chlorophyll concentrations from the Landsat series of satellites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$41 900

**START/*DÉBUT*:** *1989 08* **END/*FIN*:** *1990 07*

## 0302-120

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effects of microencapsulated & EC permethrin, & a new generation synthetic pyrethroid, SAN 811-1**

To determine effects of synthetic pyrethroids on stream invertebrates.

Financing/*Financement:* Ontario Ministry of Environment, Ontario Pesticides Advisory Committee

$29 200

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1989 04*

## 0302-121

Kaushik, N
Gordon, A
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Riparian forest plantations for wood production & stream rehabilitation: an integrated approach**

1. To evaluate the growth potential and nitrogen fluxes of selected hybrid poplar and alder plantations along the banks of Washington Creek. 2. To compare fish biomass and production in the planted and control reach of Washington Creek. 3. To compare secondary production in the planted reach and control reach of Washington Creek.

Financing/*Financement:* Ontario Ministry of Natural Resources

$33 725

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0302-122

Kenney, B
(306) 975-5769
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Prairie lake hydrology**

To determine physical processes that influence and control the growth of algae in Prairie lakes.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *ongoing*

## 0302-123

Kokta, B
Lavallée, H
(819) 375-5075
Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Fabrication de pâtes d'explosion de plusieurs essences de bois**

Evaluer les rejets (polluants) générés par la fabrication d'une nouvelle pâte à papier.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$50 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 06*

## 0302-124

Krishnappan, B
(416) 336-4766
Rivers Research Branch; National Water Research Institute; Environment Canada

**Fine sediment dynamics including contaminants and biota interactions and modelling of river flows**

Carry out experimental investigations into the transport mechanisms of fine sediments in river systems using the rotating flume and to develop modelling capabilities in the area of river flows and transport of fine sediments and the associated contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1995 03*

## 0302-125

Kumar, Y
(403) 632-6761
Alberta Environmental Centre

**Pesticide analysis and methods development**

Interdisciplinary research projects are undertaken to determine, evaluate and assess environmental impact of pesticides on the ecosystem. Emphasis is placed on method development to suit the individual research projects undertaken by Alberta Environment, Alberta Agriculture and other departments. The results are published in reports and scientific journals.

Financing/*Financement:* Alberta Environment

Alberta Agriculture

Alberta Forestry Lands & Wildlife

$180 000

## 0302-126

Kwasniewska, K
(416) 336-4576
Lakes Research Branch; National Water Research Institute; Environment Canada

**Role of yeast and fungi on contaminant fate**

To characterize and describe the new species from MODLES. To conduct contaminant degradation experiments with predominant yeasts and fungi from MODLES. To investigate importance of yeast/fungi in degradation of pulp mill related high molecular weight chlorinated organics.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$355 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1994 03*

## 0302-127

Kwong, J
(306) 975-4719
Groundwater Division; National Hydrology Research Institute; Environment Canada

**Acid mine drainage**

To study water-rock interactions in acid mine drainage and determine the fate and transport of pollutants produced by mining activity in the natural environment.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *ongoing*

## 0302-128

Lam, D
(416) 336-4916

Rivers Research Branch; National Water Research Institute; Environment Canada

**Regional modelling**

To develop regional simulation models with predictive capability for the assessment of acid deposition on a large spatial scale using the expert systems approach. To calibrate and verify the models with existing data from LRTAP monitoring network and other water quality studies and to provide scenario testing of management strategies and their uncertainties.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$483 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1990 03*

## 0302-129

Langford, C
(514) 848-4802

Université Concordia; Département de chimie

**Spéciation des métaux lourds et des pesticides dans les eaux naturelles et les sols.**

Modélisation des interactions des pesticides avec les ions métalliques et les substances organiques des sols (substances humiques) ou les hydroxydes de fer.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0302-130

Lasenby, D
(705) 748-1356

Dept. of Biology; Trent University

**Spatial patchiness of larvae of the phantom midge, chaoborus, in an acidifying lake; mechanisms and implications for monitoring**

none given

Financing/*Financement:* Ontario Ministry of Environment

$5 680

**START/*DÉBUT***: *1989 04*

## 0302-131

Lau, L
(416) 336-4897

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant/sediment transport in river flows**

Investigate the interactions between river flows and the processes of contaminant and sediment transport and transformation and develop modelling capabilities for these processes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1997 03*

## 0302-132

Lean, D
(416) 336-4783

Lakes Research Branch; National Water Research Institute; Environment Canada

**Fate of organic contaminants in lake ecosystems**

Determine factors effecting photochemical activity in lake waters. Develop emperical relationships to predict bioconcentration organochlorine contaminants (OCs) in organisms and distribution in lake ecosystems. Measure lipid production and transfer in lakes and relate to bioconcentration.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$650 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1992 03*

## 0302-133

Lechner, L
(306) 787-6195

Saskatchewan Environment and Public Safety; Air and Land Protection Branch

**Lake water chemistry for small lakes in northern Saskatchewan**

To monitor small lakes in the sensitive northern Sask. region to determine if acidity is occurring and to build up a data base for the area.

Financing/*Financement:* Saskatchewan Environment and Public Safety

**START/*DÉBUT***: *1983 06* **END/FIN**: *1988 05*

## 0302-134

Lechner, L
(306) 787-6195

Saskatchewan Environment and Public Safety

**Sensitivity of western and northern Canada surface waters to acidic inputs**

A report is available from Sask. Environment of the four western provinces, the Northwest Territories and Environment Canada. An overview of the sensitivity of the lakes in western and northern Canada to acidic deposition is presented.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$10 000

**START/*DÉBUT***: *1984 01* **END/FIN**: *1988 01*

## 0302-135

Lechner, L
(306) 787-6195

Saskatchewan Environment and Public Safety; Air and Land Protection Branch

**Sensitivity of Saskatchewan surface waters to acidic inputs, February 1987**

An overview of the sensitivity of lakes in Saskatchewan to acidic deposition is presented in a report available from Sask. Environment and Public Safety.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$10 000

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1987 02*

## 0302-136

Leclerc, A
(418) 545-5070

Université du Québec à Chicoutimi; Dep. des sciences fondamentales

**Evaluation par filtration sur gel de métaux traces associés à la matière organique dissoute de différents poids moléculaires.**

Déterminer la fraction de métaux traces en phase dissoute dans le fjord du Saguenay. Obtenir la distribution de la matière organique dissoute selon le poids moléculaire dans le fjord du Saguenay. Doser les métaux traces associés à la matière organique dissoute en fonction du poids moléculaire de cette matière.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$30 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1988 05*

## 0302-137

Lee, B
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Analysis of phthalic acid and esters (PAE's) in sediment extracts**

To develop an HPLC-ECD method for the analysis of PAE's in sediment extracts. The method should perform the clean-up, fractionation and quantitation of the sediment PAE's simultaneously. The method should be simpler, less time consuming and reduce background contamination problems.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1990 04*

## 0302-138

Lee, H
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Identification and determination of toxic organics in pulp and paper industry effluents**

Develop method for the determination of selected resin acids found in pulp and paper effluents. Identify the toxic or major chlorinated fatty acids and neutrals in effluents by GC-MSD and/or GC-MS-MS techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1989 04* **END/*FIN***: *ongoing*

## 0302-139

Leppard, G
(416) 336-4787

Lakes Research Branch; National Water Research Institute; Environment Canada

**Colloid/phosphate/contaminant interactions**

To investigate interactions between algal-produced colloids, nutrients and contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0302-140

Lesage, S
(416) 336-4597

Rivers Research Branch; National Water Research Institute; Environment Canada

**Toxic chemicals in groundwater**

Study the occurence and fate of toxic organic chemicals in groundwater. Performance Indicators: analysis and occurence of semi-volatile organic compounds in groundwater, submit MS to journal by Dec. 1989; groundwater quality beneath Sarnia, submit MS to journal by Sept. 1989; and develop capability to conduct anoxic biotransformation experiments at CCIW by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment Research Advisory Committee

$72 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

## 0302-141

Liu, D
(416) 336-4576

Rivers Research Branch; National Water Research Institute; Environment Canada

**Photo and biological degradations of contaminants in the Athabasca River system**

To systematically investigate the photo and biological degradations of selected priority contaminants (PAHs/PANHs) in the Athabasca River systems, with the emphasis on degradation/transformation mechanism, metabolites and pathways.

Financing/*Financement:* Environment Canada, Conservation and Protection

$350 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1992 03*

## 0302-142

Lo, S
(819) 375-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Evaluation du niveau de la pollution de l'eau provenant de la fabrication de la pâte PCM et de la pâte PCTM.**

Quantifier les polluants conventionnels de ces nouvelles pâtes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

## 0302-143

Lum, K
(416) 336-4617

Rivers Research Branch; National Water Research Institute; Environment Canada

**Assessment and modelling of contaminants with special reference to the Athabasca River**

Determine the significance of abiotic factors (particle composition, speciation and surface characteristics) in influencing contaminant bioavailability, transport and fluxes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1993 03*

## 0302-144

Mackenzie, I
(403) 427-3943

Alberta Environment

**Water treatment evaluation for Giardia cyst reduction**

To continue the investigation of the occurrence and survival of human infective Giardia cysts in water using the mobile experimental water treatment plant. This will lead to the formulation of recommendations for minimum water treatment standards in Alberta for Giardia cyst removal and/or inactivation.

Financing/*Financement:* Alberta Environment

$85 000

**START/*DÉBUT***: *1986 03* **END/*FIN***: *1987 03*

## 0302-145

Mackenzie, I
(403) 427-3943

Alberta Environment

**North Saskatchewan River Pulp Mill treatment research**

Research chemithermomechanical pulp mill (CTMP) technology by: characterizing effluent, evaluating CTMP technology, addressing potential potable water impacts, addressing recent public inquiries, conducting a background literature review, and assess water quality based impacts.

Financing/*Financement:* Alberta Environment

$30 000

**START/*DÉBUT***: *1986 07* **END/*FIN***: *1987 03*

## 0302-146

Maguire, R
(416) 336-4776

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fate of pesticides and industrial chemicals in the Yamaska River, Quebec**

To finish analyses of water, sediment and biota from the Yamaska River for dyes, chlorinated chemicals and pesticides. To start work on identification of PAHs and related chemicals in effluents from tar sands operations on the Athabasca River, Alberta. Cross-reference with 83013 (J. Metcalfe) and 83015 (K. Day).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$500 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1990 03*

## 0302-147

Mallory, G
(416) 361-0794

BP Resources Canada Ltd.; Mining Divison

**Ecological engineering and biological polishing methods and assessment towards controlling contaminants from an abandoned base metal mine**

To assess the feasibility & effectiveness of various ecological engineering methods to control surface and subsurface water movements, and enhance biological polishing of metal contaminants, at the abandoned South Bay copper/zinc mine in Northern Ontario. Monitoring continues to 1992.

Financing/*Financement:* British Petroleum Resources Canada Limited

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1989 12*

## 0302-148

Mann Testing
not available

not available

**Volatiles in Ambient Water - Low Level Detection**

To develop appropriate methods for non-routine low level (¡100 ppt) detection of volatile contaminants in surface water. To enable model calibration for contaminants transport.

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$80 000

**START/*DÉBUT***: *1987 07*

## 0302-149

Manning, P
(416) 336-4787

Lakes Research Branch; National Water Research Institute; Environment Canada

**Availability of P, Fe, and Pb in contaminated sediments**

To determine availability of P, Fe, and Pb in contaminated sediments of the Bay of Quinte and in riverine inputs (Trent, Moira) to the Bay.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$250 000

**START/*DÉBUT***: *1987 08* **END/*FIN***: *1991 09*

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## 0302-150

Marsalek, J
(416) 336-4899

Rivers Research Branch; National Water Research Institute; Environment Canada

**Nonpoint sources of pollution**

Develop and refine tools for characterization and quantification of nonpoint source pollution in rural and urban areas.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1998 03*

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## 0302-151

Masuda, A
(403) 427-5828

Alberta Environment

**River monitoring network**

Establish long-term databases for selected locations on major Alberta rivers to allow analyses of long-term trends. Eleven stations are monitored on a monthly basis. (Annual Reports available from the Water Quality Control Branch, Alberta Environment).

Financing/*Financement:* Alberta Environment

$100 000

**START/*DÉBUT***: *1970*

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## 0302-152

Mayer, T
(416) 336-4506

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of iron and steel mill effluents on reduction of the P-availability in Hamilton Harbour**

Determine whether industrial effluent can be used to remove P from water column, thus determine whether this effluent is beneficial or detrimental to Hamilton Harbour.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

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## 0302-153

McKean, C
not available

University of Victoria

**Physical and chemical description of limnetic sediments from Langford Lake, South Vancouver Island**

To document the physical and chemical composition of the recent and holocene sediments as they relate to the influence of climate in the geology and geomorphology of the drainage basin.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$40 200

**START/*DÉBUT***: *1982 05* **END/*FIN***: *1987 12*

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## 0302-154

McLeod, A
(519) 884-2089

McLeod-Hipel & Associates Ltd.

**Trend Analysis Procedures for PWQMN Data Series**

To develop operational statistical and graphical trend analysis procedures specifically for the PWQMN data base.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$40 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1990 04*

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## 0302-155

McNaughton, D
(306) 975-5735

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater pesticides studies in western Canada**

To determine the extent of pesticide contamination of groundwater in western Canada, through the investigation and documentation of the presence of pesticides in groundwater at selected study sites. To estimate the potential for groundwater contamination from pesticides by relating pesticide usage and chemical properties to distribution and properties of groundwater systems.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* **END/*FIN***: *ongoing*

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## 0302-156

Mehrotra, A
(403) 220-7406

University of Calgary; Department of Chemical & Petroleum Engineering

**Produced water treatment with reverse osmosis process**

To study the effectiveness of reverse osmosis membranes for the treatment of produced water (oil sands operations). The following publications describe this research project: 1. Mehrota, A.K. & A. Banergee, 'Evaluation of Reverse Osmosis for the Treatment of Oil Sands Produced Water', Water Pollution Research Journal of Canada, 21(2), pp. 141-152 (1986). 2. Mehrotra, A.K., Final Report, AOSTRA Agreement No. 232, February, 1983. 3. Banergee, A., M.Sc. Thesis, Univ. of Calgary, CAlgary Alta., 1984.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Natural Sciences & Engineering Research Council

$40 000
**START/*DÉBUT***: *1981 07* ***END/FIN***: *1984 07*

## 0302-157

Melkic, A
(519) 822-2608

Integrated Explorations

**Development of a Standard Clam Biomonitoring Methodology for the Detection of Trace Contaminants**

1. Assess the adequacy of supplies of uncontaminated clams. 2. Seek sources of alternative species from varied environments within the waters of the Ontario Great Lakes Region.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$51 500

**START/*DÉBUT***: *1986 05*

## 0302-158

Metcalfe, J
(416) 336-4685

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biomonitoring techniques for contaminants in rivers**

Complete research on the bioaccumulation and ecological/physiological effects of pesticides in aquatic organisms from the Yamaska River, Quebec. Continue research on freshwater mussels as biomonitors in the upper St. Lawrence River. Initiate research on the impact of tar sands operations on fish in the Athabasca River, Alberta.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1991 03*

## 0302-159

Moore, J
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Biological control of aquatic weeds using grass carp**

Suitability of grass carp (sterile triploids, disease-free) in controlling aquatic vegetations in southern Alberta.

Financing/*Financement:* Alberta Environmental Centre
Alberta Agriculture

$82 600

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1990 04*

## 0302-160

Moore, R
(514) 398-4111

Université Mc Gill; Département de géographie

**Snowpack water routing and chemistry**

The aim of this project is to study coupled water percolation and ion movement in a snowpack in a forested watershed, near St. Hippolyte, QC. Field measurements would include snow surface energy exchange, snow and soil thermal regimes, snowmelt rates, snowpack stratigraphy, percolation at one or two depths within and at the base of the snowpack and percolate chemistry model will be formulated by coupling a physically-based snowpack hydrologic model with a hydro-chemistry model. Field data such as snow thermal regime, surface energy exchange and statigraphy would serve as input data, and the model would simulate snowpack and percolate chemistry at different points in a pack; these values would be compared to observed values. The project would contribute to the knowledge required for modelling.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$43 500

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0302-161

Moores, R
(709) 772-4087

Environment Canada; Conservation & Protection

**Strategy for chronic and acute toxicity testing**

Develop a strategy and recommendation for chronic and acute toxicity testing related to offshore oil development using Daphnia megna and stickleback. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 04*

## 0302-162

Moores, R
(709) 772-4087

Environment Canada; Conservation & Protection

**Environmental effects monitoring program**

Develop an effluent monitoring methodology in support of environmental effects monitoring program related to chronic hydrocarbon discharge to the marine environment. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 04*

## 0302-163

Morelli, M
(204) 945-7032

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Water quality indicators at Man/Sask boundary for the Prairie Provinces Water Board**

Formulation of site specific water quality indicators to assist the Prairie Provinces Water Board in promoting effective interprovincial water management and equitable sharing of water quality resources between upstream and downstream jurisdictions.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

$4 000
**START/*DÉBUT***: *1983 04* ***END/FIN***: *1987 03*

## 0302-164

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Behaviour of in-situ sediment contaminants**

Evaluation of physio-chemical properties of sediments and their effects on the distribution and mobility of contaminants in aquatic ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$700 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0302-165

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment toxicity and treatment methods in Hamilton Harbour**

To evaluate sediment toxicity and methods of reducing sediment toxicity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Ontario Ministry of Environment

$500 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1990 10*

## 0302-166

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Small lake restoration**

Evaluate oxygen injection, lime treatment, and sediment dredging as lake restoration tools.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$300 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0302-167

Murthy, C
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**St. Lawrence River loadings and Lake Ontario/Niagara River toxics management**

To conduct physical limnological experiments (six Lagrangian drifter experiments, six current meter moorings, current profiles, etc.) at the main channels of St. Lawrence River and Kingston basin, Lake Ontario. Determine chemical loadings of selected toxic substances entering St. Lawrence River from Lake Ontario using IWD/Ontario Region chemical monitoring data. Analysis of Niagara River plume frontal effects in Lake Ontario - fate and pathways of toxics in Lake Ontario.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$1 100 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1996 04*

## 0302-168

Nagy, E
(416) 336-4685

Lakes Research Branch; National Water Research Institute; Environment Canada

**Polynuclear aromatic hydrocarbons (PAHs) in freshwater systems**

To relate PAH compositions in the sediments of known contaminated areas (Hamilton Harbour, St. Lawrence River) to possible sources. Performance Indicators: 1) To complete the analysis of PAHs in Hamilton Harbour sediments, sediment traps and cores. 2) To study PAH profiles in St. Lawrence River sediment samples. 3) Prepare a report on the Hamilton Harbour results.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$420 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1992 03*

## 0302-169

Neary, B
(705) 766-2418

Limnology Section; Water Resources Branch; Ontario Ministry of Environment

**Large lake surveys (inland lakes)**

To survey large inland lakes (Lakes Muskoka, Joseph, Rosseau, Lake of Bays, Lake Nipissing) to assess water quality problems. Report available - Muskoka Lakes Report: A Report of the 1986 Water Chemistry Survey. Also water quality management plans for the affected lakes are completed.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$187 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1989 05*

## 0302-170

Neary, B
(705) 766-2418

Limnology Section; Water Resources Branch; Ontario Ministry of Environment

**Lake of the Woods assessment (inland lakes)**

To assess the cause of the apparent increase in algal biomass in the northern part of the Lake of the Woods in recent years by using remote sensing and field surveys.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$218 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1990 05*

## 0302-171

Neary, B
(705) 766-2418

Limnology Section; Water Resources Branch; Ontario Ministry of Environment

**Sturgeon - Rice Lakes nutrient budget study (inland lakes)**

To construct nutrient budgets for Rice and Sturgeon Lakes. To estimate the impact of potential increases in nutrient loads from the Peterborough and Lindsay sewage treatment plants and other sources on lake water quality.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$369 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1989 05*

## 0302-172

Neary, B
Mierle, G
(705) 766-2418

Limnology Section; Water Resources Branch; Ontario Ministry of Environment

**Huntsville basin contaminant assessment project (inland lakes)**

To determine the cause and extent of severe mercury contamination of fish populations in the lakes surrounding Huntsville. To assess the geographical extent of contaminated fish populations, and to determine the relative concentration of mercury in streams feeding into contaminated lakes.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$410 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 03*

## 0302-173

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of ocean dumping information for active dumpsites on the BC coast from 1979 to 1986**

Updating ocean dumping information (research, monitoring) on the BC coast.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$5 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0302-174

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Sediment toxicity tests on effects of ocean dumped material on eggs of an important fish species**

1) To assess the toxicity of three different ocean dumped materials on fertilized eggs. 2) To evaluate the effectiveness of 'capping' in reducing toxicity.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$16 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0302-175

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**An assessment of cadmium in marine sediments. A study of high CD levels in Ucluelet Inlet, B.C.**

To distinguish between natural and anthropogenic sources of cadmium in Ucluelet Inlet sediments.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$18 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0302-176

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Pesticide transport by spring run-off**

To determine quality and quantity of surface run-off into 20 farm dugouts on 4 different soil types in Sask. To determine the potential movement of herbicides under zero till in agronomic practices in Manitoba.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0302-177

Nicholls, K
(416) 235-5810

Ontario Ministry of Environment; Water Resources Branch

**Inferred pH/alkalinity history of acid sensitive lakes using algal remains ('fossil') preserved in lake sediments**

To determine the rate of change of alkalinity/pH in selected lakes over the past 100 years.

Financing/*Financement:* Ontario Ministry of Environment

$90 000

## 0302-178

Nicholls, K
Vandermeulen, H
(416) 235-5810

Ontario Ministry of Environment; Water Resources Branch

**Control of blue-green algae problems in Southern Ontario lakes and reservoirs**

To evaluate methods of eliminating blue-green algal blooms using biomanipulation, physical and chemical treatment of whole lakes and reservoirs.

Financing/*Financement:* Ontario Ministry of Environment

$390 000

**START/*DÉBUT*:** *1987 01*

## 0302-179

Nordin, R
(604) 387-9517

British Columbia Ministry of Environment & Parks

**Wood Lake sediment treatment study**

Investigate the potential of using iron (ferric chloride in the form of waste pickling liquor) to immobilize phosphorus in deep lake sediments. A significant portion of the phosphorus input to the lake originates with internal loading.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

Okanagan Water Quality Control Program

$65 000

**START/*DÉBUT*:** *1986*

## 0302-180

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in fractured rock**

Investigate the controls on the velocity and dispersion of contaminants in fractured rock.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$150 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0302-181

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Hydrogeology of the Niagara frontier**

Investigate the hydrogeology of the Niagara frontier, continue monitoring of hydraulic head and geochemistry in study boreholes in Canadian network, with progress report by March, 1990. Conduct hydraulic tests in USGS boreholes with progress report by March, 1990. Continue developing theory and explanation for anomolous hydraulic head measurements in the Niagara region, progress report by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quailty

$55 000

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *ongoing*

## 0302-182

Nriagu, J
(416) 336-4784

Lakes Research Branch; National Water Research Institute; Environment Canada

**Trace metals in the lower Great Lakes: atmospheric influence**

To evaluate the role of atmospheric inputs and the influence of nutrient elements on the baseline concentrations of trace metals in waters of the lower Great Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0302-183

Ongley, E
(416) 336-4913

Rivers Research Branch; National Water Research Institute; Environment Canada

**In-situ measurement of suspended sediment size and water quality in rivers of North America**

To gather data on primary and flocculated particle size distributions in a number of major river systems in Canada and U.S.A. and to examine the possible influence of water chemistry and bacterial activity on the flocculation process. Such information is totally non-existent either in literature or in current research in North America. This dataset will also provide a more realistic set of boundary conditions for use in the laboratory experimental programme with the rotating flume of the NWRI.

Financing/*Financement:* Environment Canada, Conservation and Protection

$79 600

**START/*DÉBUT*:** *1988 04*

## 0302-184

Ouellet, S
(418) 724-1483

Université du Québec; INRS-océanologie

**Détermination des origines et des sources des hydrocarbures dans les sédiments du fjord du Saguenay.**

Analyse des sédiments du Saguenay, afin de quantifier les teneurs en n-alkanes et en HAP. A partir de ces données, évaluer l'état de dégradation de ces composés, de même qu'attribuer des origines et des sources spatio-temporelles de contamination.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Université du Québec

$15 500
**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0302-185

Ozburn, G
(807) 343-8467
Lakehead University; Dept. of Biology

**Provision of rainbow trout and daphnia toxicity testing of effluents from Northwestern Ontario**

To perform toxicity test analyses on effluent samples. The tests performed will be daphnia and trout acute lethality measurements. A final report will be submitted March 31, 1989.

Financing/*Financement:* Ontario Ministry of Environment
$60 000
**START/*DÉBUT***: *1988 10* ***END/FIN***: *1989 03*

## 0302-186

Ozburn, G
(807) 345-2121
Department of Biology & Aquatic Research Group; Lakehead University

**Toxicity of Mixtures of Organic Chemicals**

To assess the aquatic toxicity of industrial organic substances alone and as mixtures.

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch
$515 700
**START/*DÉBUT***: *1985 04*

## 0302-187

Packman, G
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea ocean dumpsite selection**

1) To select a preferred ocean dumpsite for scrap metal. 2) To carry out the pre-dump portion of a program to monitor the effects of scrap metal disposal.

Financing/*Financement:* Northern Oil and Gas Action Program
Ocean Dumping Control Act Research Fund
$152 500
**START/*DÉBUT***: *1984 04* ***END/FIN***: *1987 03*

## 0302-188

Packman, G
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Environmental studies design criteria**

1) To define natural variability of sediment physical/chemical parameters in the Beaufort Sea. 2) To determine optimum number of sample replicates for effective monitoring programs. 3) To test strategies and parameters for inclusion in monitoring guidelines.

Financing/*Financement:* Panel on Energy Research and Development
$154 300
**START/*DÉBUT***: *1984 06* ***END/FIN***: *1987 03*

## 0302-189

Palmer, M
(416) 485-7715
Gore & Storrie Limited

**Effects of Hydraulics and Effluent Chlorination on Micro-Organisms of Public Health Significance**

To develop a critique of the statistical methodology used by Beak (project 28PL) and to devise a new approach if the former is inappropriate. To integrate all the data in the appropriate model. To conduct statistical analysis of data to fulfill the objectives of the Beak study.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$26 900
**START/*DÉBUT***: *1985 02* ***END/FIN***: *1986 02*

## 0302-190

Pearson, D
not available
Upper Thames River Conservation Authority

**In-situ ultra violet (UV) disinfections of bathing beach water**

To investigate the feasibility and design/operating requirements to improve bathing beach bacterial water quality through the use of recirculation and in-situ ultra violet (UV) disinfection process.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch
$300 000
**START/*DÉBUT***: *1986 01* ***END/FIN***: *1990 01*

## 0302-191

Percy, R
(902) 426-2576
Environment Canada; Conservation & Protection; Atlantic Region

**Integrated hydrocarbon monitoring system**

As follow-up to offshore well blowout; the need for an integrated monitoring system was established. A contract is being let to develop a system of monitoring that has shown considerable promise. Report due March 1988.

Financing/*Financement:* Panel on Energy Research & Development
$150 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0302-192

Perras, S
(819) 567-1405
Université de Sherbrooke; CARTEL

**Application de la télédétection à la mesure de l'érosion hydrique associée à la culture du maïs et des céréales.**

Intégration des données multisources à un système d'information à références spatiales pour le calcul des pertes de sol, ces pertes étant causées par l'érosion hydrique survenant principalement sur les cultures sarclées. Pour ce faire, nous utilisons l'équation universelle des pertes de sol. La particularité de la méthode proposée est d'utiliser, pour résoudre cette équation, des données provenant de diverses sources (imagerie satellitaire, modèle numérique d'élévation, carte pédologique numérisée) et de les rendre superposables sous forme matricielle. Rapport disponible.

Financing/*Financement:* Sources diverses

$60 000

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 03*

## 0302-193

Pinel-Alloul, B
Methot, G
(514) 343-6190

Université de Montréal; Centre de recherches écologiques de Montréal

**Etude préliminaire d'impact sur le projet de dragage de sable dans les secteurs de Sandy Hook et de l'île de l'Est aux îles de la Madeleine, Québec.**

L'étude d'impact produite par le CREM a pour but 1) de décrire les caractéristiques physiques et biologiques de la zone à draguer et de la zone d'influence 2) d'identifier et d'évaluer l'impact d'un tel projet sur les diverses composantes décrites et enfin 3) de suggérer des mesures de mitigation susceptibles d'atténuer les impacts identifiés.

Financing/*Financement:* Silice Madeleine Inc

$90 000

## 0302-194

Pitblado, J
(705) 675-1151

Laurentian University; Geography

**Lake water quality monitoring based on remotely sensed data, phase II**

Long term aim: To aid in the establishment of a lake water quality monitoring program for Ontario based on the principles and techniques of remote sensing. Immediate objective: To characterize/ map/classify the lakes (in terms of general trophic state as well as discriminating between acidic and non-acidic lakes) of three major areas on the Precambrian Shield using Landsat TM data. Report is not available at present.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$123 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0302-195

Pitblado, R
(705) 675-1151

Department of Geography; Laurentian University

**Lake Water Quality Monitoring Based on Remotely Sensed Data: An Interdisciplinary Study**

This is to be a full-scale test of using remote sensors for water qaulity monitoring of a sample of the Province's lakes. The immediate aim of the project is to assess the feasibility of using remotely sensed data for the discrimination of acidified/ non-acidified lakes and the general trophic status of those lakes. The project has been designed as a major component of an interdisciplinary study in association with the Ontario Geological Survey, Ontario Centre for Remote Sensing.

Financing/*Financement:* Ontairo Ministry of the Environment, Research Advisory Committee

$95 000

**START/*DÉBUT***: *1986 07*

## 0302-196

Prepas, E
(403) 492-3308

University of Alberta; Dept. of Zoology

**Use of liquid oxygen to aerate deep prairie lakes**

Maintain dissolved oxygen concentrations above 2 mg/l throughout the water column of a deep (34 m) partially meromictic lake basin. Report prepared March 1989 for Alberta Fish & Wildlife Division, manuscript in preparation. Four graduate students working on this project.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

Environment Canada, Conservation & Protection

Alberta Environment

Alberta Fish & Wildlife Division

$124 500

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1998 03*

## 0302-197

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Use of lime to control algal growth and overwintering oxygen levels in Figure 8 Lake, Alberta**

To use lime to improve water quality and fisheries habitat in Figure 8 Lake, Alberta, reports prepared for 1985, 1986, 1987 and 1988. Manuscript accepted with revisions in Environmental Science and Technology.

Financing/*Financement:* Alberta Environment

$47 500

**START/*DÉBUT***: *1985 05*

## 0302-198

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Factors controlling aquatic weeds in prairie lakes and rivers**

To evaluate effects of nitrogen, and phosphorus concentrations and current speed on macrophyte growth in rivers. Reports prepared for: Recreation, Parks and Wildlife. January 1987, the University March 1988, Environment Canada December 1987, Donner Foundation January 1989; two pa-

pers published in primary literature, three submitted to primary literature.

Financing/*Financement:* Recreation Parks and Wildlife Foundation (Alberta)

University of Alberta

Environment Canada, Conservation & Protection

Alberta Environment

Donner Canadian Foundation

$214 800

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1991 03*

## 0302-199

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Use of lime to control algal growth and rooted plants in farm dugouts**

Reduce algal biomass with non toxic substance. Report prepared April 1988 and April 1989. Project will run until March 1991. Reporting will include student's thesis and papers in the primary literature. One manuscript has been accepted in primary literature.

Financing/*Financement:* Alberta Agriculture

Boreal Institute for Northern Studies

Environment Canada, Conservation & Protection

Farming for the Future, Alberta Agriculture

$122 700

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1991 04*

## 0302-200

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Sediments as a phosphorus and nitrogen source in deep prairie lakes**

To produce an approach to estimate the impact of sediment-released nutrients on water quality in prairie lakes. Interim reports prepared in 1984, 85, and 86, final report prepared in 1987, three publications accepted in primary literature, two MS submitted, plus students Ph.D. Thesis accepted March 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Boreal Institute for Northern Studies

$50 584

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 10*

## 0302-201

Qureshi, A
Dieken, F
(403) 632-6761

Alberta Environmental Centre

**Survey of feedlot wastes**

To study and provide data/information on the impact of cattle feedlot wastes on the quality of adjacent receiving surface waters. Interdepartmental and interdisciplinary project involving microbiological, chemical and statistical studies/aspects.

Financing/*Financement:* Alberta Environment

Alberta Agriculture

**START/*DÉBUT*:** *1983 03* **END/FIN:** *1989 12*

## 0302-202

Rao, S
(416) 336-4924

Rivers Research Branch; National Water Research Institute; Environment Canada

**Role of particulates in the transport and fate of contaminants in fluvial systems**

To define the role of suspended and sediment particles (organic aggregates/inorganic particles) in the downstream transport of contaminants and establish the active fractions. To evaluate the impact, fate and transport of tar sands, and urban contaminants on various river systems using microbiological activity tests.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/FIN:** *ongoing*

## 0302-203

Redpath, A
(416) 499-3060

Ecopiastics Ltd.

**Retractable Composite Absorbents for Environmental Clean-up**

The clean up of chemically contaminated creek, river bed and lake bottom sediments is a problem of increasing importance. This 3-month study proposes to investigate the combination of two novel technologies: magnetically retractable adsorbents with polymer matrix support systems. It is intended to be a feasibility study that: a) fully defines the practical requirements of polymer based retractible adsorbent system, b) demonstrates in the laboratory the technical feasibility of the process.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$29 600

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 03*

## 0302-204

Ridley, K
(306) 975-5747

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Landfills**

To study contaminant transport in general utilizing a landfill site as a point source. The study will include leacate/clay mineral interaction, diffusion, large scale infiltration field test, fracture flow, modelling, and installation of a leachate collection well, suction lysimeter soil matrix potential instrumentation, standpipe piezometers and neutron probe access tubes. To make recommendations for further research

for an ongoing study program, anticipated that this program will be active for many years.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *1989*

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## 0302-205

Rondeau, N
(418) 523-7375

Université du Québec; INRS-eau

**Application du modèle QUAL-II à la Petite Décharge - Alma**

Etudier l'utilisation par la Direction de la qualité du milieu aquatique (DQMA), d'un modèle mathématique de qualité des eaux de surface dans une perspective d'intervention au niveau des sources de pollution organique. Le modèle QUAL-II est appliqué à la rivière Petite Décharge (Alma) qui subit une détérioration de sa qualité causée par une usine de pâtes et papier. Projet de maîtrise

Financing/*Financement:* Québec, ministère de l'Environnement

Fonds pour la formation des chercheurs et l'aide à la recherche

$4 500

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1987 08*

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## 0302-206

Rosa, F
(416) 336-4525

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment transport and pore water contaminants**

Measure winter sediment flux rates in Lake Erie. Spanish River pore water data interpretation.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$144 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

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## 0302-207

Rouleau, A
(418) 545-5213

Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Caractérisation et modélisation hydrogéologique de massifs rocheux fracturés.**

L'écoulement de l'eau souterraine et le transfert de polluants dans des massifs rocheux fracturés prennent place surtout dans les réseaux de fractures. Nous visons à développer des méthodes efficaces de caractérisation 1) de la géométrie des réseaux de fractures et 2) du comportement hydraulique de massifs rocheux. Nous développons des modèles probabilistes qui intègrent les données de terrain et qui simulent l'écoulement et le transfert de polluants dans des massifs rocheux fracturés.

Financing/*Financement:* Fonds institutionnel de recherche

Québec, ministère de l'Enseignement supérieur et de la Science

$8 200

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## 0302-208

Rowney, A
(613) 545-2135

Queen's University; Dept. of Civil Engineering

**Pollutant transport and accumulation in receiving waters**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$45 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

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## 0302-209

Rowney, A
(613) 545-2135

Civil Engineering; Queen's University

**An analysis of heavy metal distribution in a small urban lake**

unavailable

Financing/*Financement:* Natural Sciences and Engineering Research Council

$25 040

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 03*

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## 0302-210

Rowney, A
(613) 545-2135

Civil Engineering; Queen's University

**A determination of heavy metal distribution in a small lake**

unavailable

Financing/*Financement:* Queen's University

$6 500

**START/*DÉBUT*:** *1985 05* **END/FIN:** *1986 04*

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## 0302-211

Roy, J
(418) 656-3284

Université Laval; Département de chimie

**Etude de la radioactivité dans le fleuve Saint-Laurent et ses affluents.**

Identification des radionucléides. Mesure de la radioactivité associée à la matière en suspension. Mesure de la radioactivité dans les eaux brutes et traitées. Détermination de la source des radionucléides dans le bassin du Saint-Laurent. Mesures des retombées atmosphériques dues aux essais nucléaires, aux accidents nucléaires et à l'opération des centrales nucléaires. Modes de transport des radionucléides dans les eaux fluviales. Mesure du temps de transport dans les rivières pour certains nucléides. Mesure de l'état physico-chimique des radionucléides.

Financing/*Financement:* Fonds personnel

$8 000

## 0302-212

Ruel, J
(418) 643-7994

Ministère l'Energie et Ressources; Direction recherche et développement

**Etude de diverses interventions dans les bandes riveraines.**

Identifier une intervention qui, selon les milieux, assure une bonne utilisation des diverses fonctions du milieu riverain: production forestière, production faunique, maintien de la qualité de l'eau.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$40 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1998*

## 0302-213

Sanderson, M
Hebert, P
(519) 253-4232

Great Lakes Institute; University of Winsdor

**Future Great Lakes water levels - environmental and political impacts**

Objectives (1) To model future changes in Great Lakes water levels. (2) To determine the environmental impacts of future lake level changes. (3) To study the social and economic implications of lake level changes.

Financing/*Financement:* Donner Canadian Foundation

$200 000

**START/*DÉBUT***: *1986* **END/*FIN***: *1988 01*

## 0302-214

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant modelling of Little Turkey Lakes and Lake Ontario**

To complete hydrological modelling of Little Turkey Lakes for application to toxic mass balance models. Preliminary testing of existing toxic exchange models to Little Turkey Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$100 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1993 03*

## 0302-215

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling climate variations of air-water interactions**

To collate hydrometeorological/limnological data (1984-1989) to extend existing long term climate data base for Lake Erie and Lake Ontario and to compute surface energy balances and turbulent exchanges. To analyse NWRI surveillance data (1966-present) on the lower Great Lakes to derive basin wide vertical temperature profiles and accurate heat storage estimates for model verification and detection of climate change in lake thermal characteristics. To finalize report on water quality, seston, sediment chemistry and hydrology on Lake St. Clair. This study forms part of the NWRI commitment to the Canada Climate Program.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$400 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1996 04*

## 0302-216

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Field sampling to monitor impacts resulting from in-situ heavy oil subsurface disposal practices**

To develop and estimate costs associated with the geologic, hydrogeologic and hydrogeochemical sampling and testing component of a field program to monitor the potential impact of waste fluid injection in the vicinity of Cold Lake, Alberta. Report copies are still available.

Financing/*Financement:* Panel on Energy Research & Development

$45 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1987 06*

## 0302-217

Sekerka, I
(416) 336-4657

Research and Applications Branch; National Water Research Institute; Environment Canada

**Continuous flow analytical systems**

To develop in-line preconcentration and digestion systems. To develop FIA method for ammonia using isothermal distillation principle. To test the robotic system under routine operation conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1990 03*

## 0302-218

Semkin, R
(416) 336-4781

Rivers Research Branch; National Water Research Institute; Environment Canada

**Hydrogeochemical response of Turkey Lakes to LRTAP**

Quantify the hydrogeochemical response of the Turkey Lakes watershed to acidic deposition using a mass balance approach. Provide results from the TLW studies to support the RMCC/LRTAP Assessment Report.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$1 500 000
**START/*DÉBUT***: *1980 04* ***END/FIN***: *1990 03*

## 0302-219

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Optimisation du traitement de l'eau potable en fonction des fluctuations de la qualité de l'eau brute.**

A partir de mesures continues ou discontinues de certain paramètres représentatifs de la qualité de l'eau brute, ajuster les dosages des produits chimiques utilisés en usine de filtration de l'eau de consommation.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$2 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1989 04*

## 0302-220

Servos, M
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Fate and effects of atmospheric contaminants transported across lake air/water interfaces**

To investigate the factors controlling the gas transfer of persistent toxic compounds at the air-water interface.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0302-221

Seyfried, P
(416) 978-2760

Faculty of Medicine; University of Toronto

**Humber River/Black Creek: Bacteriological Water Quality Study, Impact of Sediment & Survival Times**

1) To determine the extent of bacterial exchange between sediment and water as a result of resuspension of sediment. 2) To determine survival times of fecal indicator bacteria in the Humber River environment. 3) To provide information required for methods being developed for inferring original sources of fecal pollution by identifying bacteria present at study sites. 4) Determining loadings, potential for sediment transport and deposition capacity of different source types.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$98 000

**START/*DÉBUT***: *1985 04*

## 0302-222

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Point source impact monitoring techniques; marine benthic environment**

Subproject title: Point source benthic biological monitoring in Tuktoyaktuk Harbour, NWT. 1) To assess effects of contaminants released into the harbour on the indigenous benthic fauna. 2) To assess methods for studying sublethal effects on benthic fauna to determine which methods are suitable for wider application to programs for monitoring impacts from Beaufort Sea development.

Financing/*Financement:* Northern Oil and Gas Action Program

Environment Canada, Conservation and Protection

$320 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0302-223

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea baseline monitoring program for Amauligak drilling and production activities**

To conduct a baseline survey near the Amauligak F-24 wellsite to provide data which can be used as a benchmark for future environmental effects monitoring programs.

Financing/*Financement:* Northern Oil and Gas Action Program

Baseline Studies Fund

$50 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1988 03*

## 0302-224

Sherbin, G
(416) 973-1098

Environment Canada; Environmental Protection

**Anaerobic treatment for BOD and toxicity reduction in pulp and paper wastewaters**

To provide data on the best available technology economically achievable for the pulp and paper sector, which will be used in the development of the effluents limits regulation.

Financing/*Financement:* Ontario Ministry of Environment

$733 000

**START/*DÉBUT***: *1987 00* ***END/FIN***: *1990 00*

## 0302-225

Sherry, J
Wilkinson, R
(416) 336-4813

Research and Applications Branch; National Water Research Institute; Environment Canada

**Screening techniques for the detection of pollutants**

Evaluate and adapt an enzyme immunoassay screening technique for the detection of pentachlorophenol in environmental samples. Complete evaluation/adaptation of screening test for the detection of Atrazine and transfer to the NWQL. Further improve RIA for the detection of PCDDs. Continue to implement the RIA for PCDDs in the NWQL. Use the RIA to detect PCDDs in pulp and paper mill effluent (subject to National Task Force requirements).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

**START/*DÉBUT*:** *1988 04* **END/FIN:** *ongoing*

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## 0302-226

Siebert, H
McIntosh, L
(403) 998-6339

Environmental Services; Sherritt Gordon Ltd.

**Monitoring/detection of effluent for Ni and Cu**

Develop a system for spill detection/control.

Financing/*Financement:* Sherritt Gordon Mines Ltd.

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## 0302-227

Siebert, H
Masters, I
(403) 998-6339

Environmental Services; Sherritt Gordon Ltd.

**Monitoring/detection of effluent for NH3-N**

Develop system for spill control.

Financing/*Financement:* Sherritt Gordon Mines Ltd.

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## 0302-228

Slaymaker, O
(604) 228-3246

University of British Columbia

**Similkameen River water quality objectives - toxic metals**

none available

Financing/*Financement:* Environment Canada, Conservation and Protection

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## 0302-229

Smart, C
(519) 679-2111

University of Western Ontario; Geography Department

**Alpine hydrology**

Identifying and describing alpine drainage systems in glaciers, karst groundwater systems, fracture and debris aquifers.

Financing/*Financement:* Natural Sciences & Engineering Research Council

University of Western Ontario

$200 000

**START/*DÉBUT*:** *1984 08*

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## 0302-230

Smillie, R
(403) 632-6761

Alberta Environmental Centre

**Trace organic analysis and method development**

Trace organic analyses and method development is provided for enforcement of provincial statutes, and for support of applied research dealing with effective use, regulation and environmental impact of persistent organic chemicals.

Financing/*Financement:* Alberta Environment

Alberta Community & Occupational Health

Alberta Forestry Lands & Wildlife

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## 0302-231

Smol, J
(613) 545-6147

Biology; Queen's University

**Paleoecological investigation of recent lake acidification in the Sierra Nevada**

unavailable

Financing/*Financement:* Indiana University

$17 068

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## 0302-232

Smol, J
(613) 545-6147

Biology; Queen's University

**Limnology and paleolimnology of lakes**

unavailable

Financing/*Financement:* Natural Sciences & Engineering Research Council

$70 500

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 03*

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## 0302-233

Smol, J
Kingston, J
(613) 545-6147

Queen's University; Biology Department

**Paleoecological assessment of changes in Adirondack Lake ph and alkalinity, pre-1950 to present**

none present

Financing/*Financement:* Indiana University

$197 234

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1989 09*

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## 0302-234

Smol, J
Kingston, J
(613) 545-6147

Queen's University; Biology Department

**Paleoecological assessment of changes in Adirondack Lake ph and alkalinity: recent (since 1970) and historical (since 1850) trends**

none available

Financing/*Financement:* United States Environmental Protection Agency

$98 671

**START/*DÉBUT***: *1988 10* **END/*FIN***: *1990 09*

## 0302-235

Smoragiewicz, W
Robitaille, P
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Analyse de certains paramètres microbiologiques et physico-chimiques des eaux usées du réseau d'égout de Montréal.**

L'objectif de notre recherche est d'identifier la présence de certains paramètres biologiques et physico-chimiques pouvant occasionner aux travailleurs des problèmes de santé (microorganismes et produits toxiques) et sécurité (gaz explosifs).

Financing/*Financement:* Fonds institutionnel de recherche

$6 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1988 06*

## 0302-236

Snodgrass, W
(416) 671-2600

Beak Consultants

**Prediction of rate of oxygen depletion in recreational, urbanized and agricultural lakes**

To relate the oxygen cycle to inputs of nutrients and dissolved organic carbon. To relate the model to fisheries potential data (if available). To test the model upon the Muskoka-Haliburton-Kawartha Lakes, and recreational lakes subjected to agricultural/urban influences.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$64 300

**START/*DÉBUT***: *1986 11* **END/*FIN***: *1989 10*

## 0302-237

St-Laurent, D
(514) 651-4383

Université du Québec à Montréal; Département des sciences biologiques

**Etude de l'effet sublétal de substances génotoxiques vis-à-vis le bioindicateur de toxicité aquatique Selenestrum capricornutum.**

Investigation de la relation effet sublétal / létal sur l'algue suite à son exposition à une substance génotoxique, simulant l'effet d'un effluent génotoxique déversé dans un milieu récepteur de type lotique et lentique. Cette étude est orientée de façon à développer un test rentable de létalité algale (afin de mieux évaluer le risque au phytoplancton). Projet de maîtrise.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0302-238

Stelzig, A
(819) 953-1134

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Review of current cleanup criteria, methodology for establishing cleanup criteria**

Report submitted to CCREM, March 1987 - 'Inventory of Cleanup Criteria and Methods to Select Criteria' (IP-71). Develop a methodology for establishing site specific cleanup criteria for application across Canada. Final report will be submitted to CCREM in September 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Alberta Environment

Ministere de l'Environnement du Quebec

$800 000

**START/*DÉBUT***: *1987 02* **END/*FIN***: *1988 09*

## 0302-239

Stillman, M
(519) 679-2111

University of Western Ontario; Department of Chemistry

**Development of an expert system for automated analysis of metals**

To develop a demo expert system to fully control an AA for metal analysis. To develop a generic expert system to monitor and model quality control procedures used for data analysis. Investigate use of an expert system for technical personnel training. Output: 'Development of ACexpert. Design of an expert system for automated metal analysis by atomic absorption spectroscopy', W.R. Browett, T.A. Cox, M.J. Stillman, Dept. of Chem., University of Western Ontario. 'Expert system shells in analytical chemistry. The design of ACexpert: Automation of metal ion determination using AAS', submitted to Progress in Analytical Chemistry. See the OMOE's Inventory of R&D Projects for more listings.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$151 200

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1992 03*

## 0302-240

Stillman, M
(519) 661-3821

University of Western Ontario; Dept. of Chemistry

**Computer aided analytical chemistry: development of an expert system for use in the chemical laboratory**

Develop a demonstration AAS instrument with full automation of sample dispensing and QC of results. Develop use of expert systems for method selection and QA.

Financing/*Financement:* University of Western Ontario

$20 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1990 03*

## 0302-241

Stokes, P
(416) 978-6526

Institute for Environmental Studies; University of Toronto

**Metal Uptake by Cladophora Glomerata in Niagara River**

1. To determine the rate of uptake and loss of selected heavy metals in Caldophora Glomerata in the Niagara River. 2. To determine the seasonal variation in selected heavy metals in Cladophora Glomerata in the Niagara River.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$7 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 04*

## 0302-242

Stokes, P
(416) 978-6526

Institute for Environmental Studies; University of Toronto

**Measurement and Speciation of Mercury in Natural Waters; Assessment Mercury Contamination**

To determine the source(s) of mercury and methylmercury to the Huntsville Lakes.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$147 000

**START/*DÉBUT***: *1986 10* **END/FIN**: *1990 03*

## 0302-243

Stokes, P
France, R
(416) 978-4545

Institute for Environmental Studies; University of Toronto

**Influence of lake pH and macrograzers on nuisance metaphytic algal growth**

To determine factors (primary and secondary) related to the increased growth of attached and metaphytic zygnemataceae algae in softwater lakes.

Financing/*Financement:* Ontario Ministry of Environment

$28 000

## 0302-244

Sutherland, D
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Criteria for the control and monitoring of petroleum development impacts on the Mackenzie River**

To develop criteria for the regulation and monitoring of petroleum waste discharges to the Mackenzie River through the assessment of impacts on water and sediment quality and biota (toxicity and bioaccumulation). Summary report available in 1988.

Financing/*Financement:* Northern Oil and Gas Action Program

$330 000

**START/*DÉBUT***: *1984 04* **END/FIN**: *1988 03*

## 0302-245

Sutherland, D
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of impact detection techniques and approaches at a gold mine in the NWT - Lupin mine**

To monitor the impact of gold mining effluents on water quality, sediment, and biota in Contwoyto Lake; and to evaluate monitoring techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection

$24 000

**START/*DÉBUT***: *1985 04* **END/FIN**: *1986 03*

## 0302-246

Swanson, S
Peterson, H
(306) 933-8174

Saskatchewan Research Council

**Algae control in farm ponds**

Investigate causes and possible treatments of persistent nuisance algae blooms in farm dugouts in the Melfort - Tisdale area that are used for drinking water. Report available in April 1988.

Financing/*Financement:* Agriculture Development Fund

Saskatchewan Research Council

$139 000

**START/*DÉBUT***: *1987 05* **END/FIN**: *1989 06*

## 0302-247

Telang, S
(403) 220-6375

Kananaskis Centre for Environmental Research; University of Calgary

**Environmental audit: Swan Hills monitoring program**

To review the reports on the baseline studies conducted at the Swan Hills landfill site. Five reports on air, soil, vegetation, groundwater, surface water, and aquatic biota were reviewed. Final report available from Chem-Securities Ltd., Calgary.

Financing/*Financement:* Chem-Securities Ltd.

**START/*DÉBUT***: *1987 08* **END/FIN**: *1987 11*

## 0302-248

Tollefson, E
Hall, E
(403) 220-5754

University of Calgary; Dept. of Chemical & Petroleum Engineering

**Process for desulfurization of coke produced in recovering synthetic crude oil from bitumen**

To develop a process for the removal of sulphur from coke produced by Syncrude Canada Ltd. and Suncor Inc. Remo-

val of a major portion of the sulphur present in the coke would make it feasible to burn the coke as a relatively clean fuel. Reports are available through Alberta Oil Sands Technology and Research Authority in Edmonton.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT***: *1975 04*

## 0302-249

Trudell, M
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Hydrodynamics of soil salinization in east-central Alberta**

To evaluate the role of shallow groundwater flow systems in the redistribution of soluble salts, and to assess the scale over which the redistribution of salts occurs in the Prairies.

Financing/*Financement:* Alberta Research Council

$593 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1990 03*

## 0302-250

Trudell, M
Ched, D
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Assessment of potential groundwater contamination by migration of enhanced oil recovery (EOR) production fluids**

To evaluate the potential for contamination of shallow aquifers by production fluids from enhanced oil recovery.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Alberta Research Council

$58 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

## 0302-251

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Développement d'une méthode utilisant les boues des usines de traitement d'eau potable pour mesurer la concentration des métaux toxiques dans l'eau des rivières.**

Mettre au point un échantillonneur automatique à échelle réduite pour des prélèvements d'eau de rivière: un appareil qui prélève des échantillons représentatifs de la qualité de l'eau (qui varie constamment pendant des périodes allant de quelques jours à quelques semaines; un appareil qui concentre les métaux à l'état de traces de façon à les doser avec précision et de façon fiable.

Financing/*Financement:* Québec, ministère de l'Environnement

$10 300

**START/*DÉBUT***: *1985 12* **END/FIN**: *1987 05*

## 0302-252

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Mise au point d'un échantillonneur automatique pour l'analyse des pesticides dans l'eau des rivières.**

Le but de ce projet est d'ajouter une fonction supplémentaire à un échantillonneur automatique que nous avons conçu, construit et expérimenté dans l'intention d'y doser les métaux traces dans les cours d'eau. Objectifs: Concevoir un extracteur liquide-liquide à échelle réduite qui puisse opérer automatiquement en régime continu; s'assurer de l'obtention, par le cumul d'extractions, d'un prélèvement concentré qui reflète la teneur des pesticides dans le cours d'eau avec justesse et précision.

Financing/*Financement:* Fonds institutionnel de recherche

## 0302-253

Unny, T
(519) 885-1211

Department of Systems Design; University of Waterloo

**Estimation of Ambient Water Qualities in Ontario Rivers to Identify & Manage Water Quality Problems**

To quantify, on the basis of historical record, the uncertanties in water quality parameters in Ontario rivers and to develop a basis to assess the effect of variations of these parameters on decision-making with regard to protection against risk to the environment due to stream degradations.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$27 500

**START/*DÉBUT***: *1986 05* **END/FIN**: *1987 05*

## 0302-254

Unny, T
(519) 885-1211

Department of Systems Design; University of Waterloo

**Development of an Expert System for Decision Making with Regard to Water Quality in Ontario Rivers**

To develop an expert system for applications in decision making with regard to water quality in Ontario Rivers with the objective to: 1. provide a basis for the assessment of uncertainties in water quality parameters, 2. to develop a procedure to determine the effect of random variations in these parameters in decision making and, 3. to fill in the knowledge base of parameter specific toxicity. To test the protoype system and modify the program.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$82 500

**START/*DÉBUT***: *1986 05* **END/FIN**: *1987 05*

## 0302-255

Vaillancourt, G
(819) 376-5053

Université du Québec à Trois-Rivières; Département de chimie biologie

**Suivi environnemental dans le secteur des installations nucléaires de Gentilly**

Etudier l'impact des rejets thermiques sur l'écosystème aquatique de ce secteur fluvial.

Financing/*Financement:* Hydro-Québec

$30 000

## 0302-256

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Méthodologie d'évaluation de l'évolution de la qualité de l'eau du fleuve St-Laurent**

Dèveloppement d'un logiciel pour l'analyse des tendances temporelles d'évolution des parametres de qualité.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$111 000

**START/*DÉBUT***: *1986 08* ***END/FIN***: *1989 04*

## 0302-257

Van der Vinne, G
Andres, D
(403) 450-5276

Alberta Research Council; Resource Technologies Dept.

**Athabasca River dispersion study**

To obtain travel times and missing characteristics of pollutants (under an ice cover) in the Athabasca River between Hinton and Athabasca. Report not available at this time.

Financing/*Financement:* Alberta Environment

## 0302-258

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Treatment of fish hatchery supply waters for the removal of IPN virus**

To demonstrate the successful disinfection of IPN containing water. To obtain the necessary facility in one of Alberta's hatcheries.

Financing/*Financement:* Alberta Public Works Supply & Services

Alberta Environmental Centre

**START/*DÉBUT***: *1989 04*

## 0302-259

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Drinking water treatment for giardia cyst removal and inactivation**

To investigate the effectiveness of Cl2, Cl02, chloramine and ozone of giardia cysts. Filtration for the removal of cysts is also being invesigated.

Financing/*Financement:* Alberta Environment Research Trust

Alberta Environmental Centre

**START/*DÉBUT***: *1985 09*

## 0302-260

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Use of PAC for water quality improvement at the City of Edmonton**

To evaluate the effectiveness of PAC in a slurry recirculating clarifier for the removal of organics. Thesis (University of Alberta) available, publications in preparation and green report (AEC) to be prepared.

Financing/*Financement:* City of Edmonton, Alberta

Alberta Environmental Centre

**START/*DÉBUT***: *1987 09*

## 0302-261

van Roodselaar, A
Skinner, F
(403) 632-6761

Alberta Environmental Centre

**Ozone technology applications to drinking water**

To develop and assess current ozone technology for application to drinking water problems in Alberta.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1986 06*

## 0302-262

van Roodselaar, A
Wilson, M
(403) 632-6761

Alberta Environmental Centre

**Treatability of surface waters contaminated with pulp mill effluents**

To investigate the availability and performance of technology necessary to treat surface waters contaminated with pulp mill effluents when these waters are to be used for drinking.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1988 08*

## 0302-263

Villeneuve, J
Campbell, P
(418) 654-2532

Université du Québec; INRS-eau

**Développement d'un nouvel outil simple et adaptable pour l'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides.**

Réaliser un logiciel d'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides. Cet outil

repose sur la modélisation stochastique du transfert des pesticides dans la zone non-saturée. Ce logiciel fonctionne sur IBM-Pc et compatible.

Financing/*Financement:* Canada, ministère de l'Environnnment

Fondation Donner

$317 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1987*

## 0302-264

Visser, S
(418) 656-3280

Université Laval; Département des sols

**Effet de l'épandage du lisier de porc sur la qualité des eaux de percolation provenant de diverses classes texturées de sol.**

Etudier la problématique socio-économique et environnementale entourant l'épandage du lisier de porc au Québec. Vérifiez les hypothèses suivantes: (1) l'épandage du lisier de porc constitue un danger au niveau de la qualité (fertilité, toxicité) des eaux de percolation pour l'environnement aquatique; (2) le degré de pollution est fonction de la classe texturale du sol et de la qualité de lisier appliquée.

Financing/*Financement:* Québec, ministère de l'Environnement

$10 500

**START/*DÉBUT*:** *1985 10* **END/FIN:** *1986 12*

## 0302-265

Wallis, P
(403) 220-5355

Kananaskis Centre for Environmental Research; University of Calgary

**Water treatment procedures for removal of Giardia cysts**

To develop water treatment procedures using conventional equipment and a mobile water treatment plant for removal of Giardia cysts.

Financing/*Financement:* Alberta Environment

**START/*DÉBUT*:** *1985 05* **END/FIN:** *1988 04*

## 0302-266

Walters, M
(416) 895-1281

Lake Simcoe Conservation Authority

**In situ determination of fecal indicator bacteria survival in agriculturally impacted watersheds**

To document and investigate the seasonal variations in bottom sediments and water columns, including the environmental factors that may influence bacterial survival. To provide bacterial survival data required to develop a transport model and to assess the contribution of individual inputs from agricultural sources on beaches.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$154 000

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0302-267

Watt, E
(613) 545-2137

Queen's University; Department of Civil Engineering

**The Effects of Agricultural Drainage on sediment and Water Quality Loadings**

To develop, calibrate and verify a model to simulate the effects of agricultural land use and drainage on the sediment and water quality loadings to receiving streams. To provide guidance on the use of the model to evaluate potential management strategies.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$90 000

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1990 04*

## 0302-268

Wiegand, R
(604) 922-4809

SciTech Consultants Inc.

**Restoration of lakes by trapping sediment in small dredged holes (UP G6-014)**

To demonstrate and evaluate the effectiveness of a dredged depression in a lakebed for entrapping nutrient-rich sediments, as a means of eutrophication control and water quality improvement in Chain Lake, B.C.

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation and Protection

British Columbia Ministry of Environment & Parks

Similkameen

$420 370

**START/*DÉBUT*:** *1987 11*

## 0302-269

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Detection of lakeshore subsurface inflows from septic tanks and their effects on lake water quality**

To utilize a boat mounted fluorometer system for foreshore scanning of lake water near the lake bottom, and for sampling lake water to determine locations of inflows and possible effects of septic tank drainfields on water quality.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

**START/*DÉBUT*:** *1985*

## 0302-270

Williamson, D
(204) 945-7030

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Hexazinone (Velpar-L) monitoring of groundwater in Agassiz Provincial Forest**

To monitor the fate and distribution of hexazinone in groundwater following application for forestry manage-

ment. This work has been accepted for publication: Williamson, D.A. 1989. Hexazinone residues in surface and groundwater at two sites within Agassiz Provincial Forest, Manitoba, Canada. Water Pollution Research Journal of Canada (23) 3:?

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

$45 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 05*

## 0302-271

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**The effects of land reclamation procedures on groundwater and streamwater chemistry**

To determine whether the application of dolomitic limestone, as used in the Sudbury Land Reclamation Programme, has a beneficial effect on pH and toxic metal content of groundwater and stream water within the watershed, thereby reducing the necessity of liming acid lakes fed by such watersheds. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$16 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1988 10*

## 0302-272

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Limited

**Water quality monitoring in relation to hydrostatic pipeline testing**

To quantitatively assess chemical and physical changes to water quality that result from hydrostatic pipeline testing. Reports avaible for viewing at the National Energy Board, Ottawa.

Financing/*Financement:* Interprovincial Pipe Line Company

$120 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1987 11*

## 0302-273

Wishart, D
(403) 420-5210

Interprovincial Pipe Line (NW) Ltd.

**Aquatic monitoring studies of the Norman Wells to Zama Pipeline**

To determine if pipeline construction or operation were contributing to degradation of aquatic habitats or water quality along the pipeline route. Interim and final reports are available for viewing from Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$250 000

**START/*DÉBUT***: *1984 01*

## 0302-274

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Derivation of a site-specific water quality objective for atrazine in the Yamaska River, Québec**

To derive a site-specific water quality quideline to manage water resources and to assess water quality problems in the Yamaska River, Québec. Report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0302-275

Yong, R
(514) 398-6672

Université McGill; Centre de recherches géotechniques

**Mesure de l'incidence des amas de fumier sur les eaux souterraines et de surface.**

Evaluer la quantité et la qualité du purin ruisselant des amas de fumier. Evaluer les risques le degré de contamination (N, P, K) du sol et des eaux souterraines et les charges atteignant les fossés de ferme ou les cours d'eau.

Financing/*Financement:* Québec, ministère de l'Environnement

$92 105

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1991 03*

## 0303-1

Allard, D
Prévost, M
(514) 384-1260

Gendron Lefèbvre

**Essais-pilotes de mise à l'échelle du pressoir rotatif à l'usine d'épuration des eaux de Ville de Laval.**

Vérifier le facteur d'échelle en comparant les rendements de pressoirs expérimentaux ayant des diamètres de 610mm et1220mm. On compare les performances des pressoirs avec trois types de boues. Les critères utilisés pour évaluer les rendements sont: le taux de production par unité de surface, la siccité des gâteaux produits, le taux de capture des solides et l'énergie requise. Les résultats obtenus pour les boues physico-chimiques peuvent servir de guide pour le design d'installations futures. Rapport disponible.

Financing/*Financement:* Gouvernement du Québec

Ville de Laval

$170 000 **END/*FIN*:** *1988 04*

## 0303-2

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**IJC quality control studies**

Provide five interlaboratory quality control comparison studies to laboratories in the Great Lakes Basin that support the IJC-Canada U. S. Great Lakes Quality Agreement.

Financing/*Financement:* Environment Canada, Conservation and Protection

$2 000 000

**START/*DÉBUT*:** *1978 04* **END/*FIN*:** *ongoing*

## 0303-3

Aubé, P
(418) 423-4241

Les Industries Fournier Inc

**Etude de préfaisabilité d'essorage du lisier de porc par le pressoir rotatif.**

Vérifier si le conditionnement du lisier de porc est possible avec l'emploi de polymères. Vérifier si le conditionnement du lisier de porc est plus facile en ajoutant de la tourbe. Vérifier les paramètres d'opération du pressoir rotatif (vitesse de rotation, pressions d'alimentation et de sortie). Vérifier si la configuration actuelle du pressoir (sortie, tamis, système d'alimentation) s'applique à la déshydratation du lisier de porc. Estimer les rendements préliminaires (taux de filtration, siccité de gâteau, qualité du filtrat) du pressoir rotatif pour l'essorage du lisier de porc.

Financing/*Financement:* Québec, ministère de l'Environnement

Société québécoise d'assainissement des eaux

$34 111

**START/*DÉBUT*:** *1988 09* **END/*FIN*:** *1988 12*

## 0303-4

Averill, D
(416) 336-4747

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Process control and upgrading of effluent filtration**

To develop process control and monitoring strategies for granular media filters employed in either municipal or industrial wastewater treatment processes and to develop a better understanding of filter design and operation procedures. To optimize granular media filter systems for specific wastewater applications. Interim reports available from the project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection

$383 000

**START/*DÉBUT*:** *1981* **END/*FIN*:** *ongoing*

## 0303-5

Barrington, S
(514) 398-7776

Collège MacDonald; Département de génie rural

**L'utilisation de géotextile non tissé pour colmater des structures en sol grossier pour l'entreposage des lisiers de porcs.**

Faire l'essai au champ d'un géotextile non tissé, à fine porosité, comme enveloppe colmatante sur sol grossier servant de structure d'entreposage de lisiers de porcs.

Financing/*Financement:* Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Canada, ministère de l'Agriculture

$20 000

## 0303-6

Barrington, S
(514) 398-7776

Collège MacDonald; Département de génie rural

**Conception d'un recouvrement pour plateforme à fumier solide.**

Ce recouvrement est composé d'un géotextile imperméable retenu sur les côtés de la plateforme par une structure

d'acier galvanisé. Le système d'évacuation du fumier est souterrain: déterminer 'in situ' les forces agissant sur le recouvrement; évaluer la quantité de litière requise pour empêcher le suintement; évaluer le degré de contamination des eaux de pluie ruissellant du recouvrement; évaluer la faisabilité économique du système.

Financing/*Financement:* Québec, ministère de l'Environnement

$58 200

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1990 09*

## 0303-7

Barrington, S
Madramootoo, C
(514) 398-7776

Collège MacDonald; Département de génie rural

**Les bandes riveraines servant à l'épuration des sources de pollutions diffuses agricoles.**

Vérifier l'effet de la largeur de bandes riveraines en bordure de cours d'eau sur la qualité des eaux de ruissellement s'y drainant directement.

Financing/*Financement:* Union des producteurs agricoles

Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Canada, ministère de l'Agriculture

$50 000

## 0303-8

Beaudet, R
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Etude microbiologique d'un traitement aérobic simplifié du lisier de porc.**

Effectuer le suivi microbiologique du procédé de traitement du lisier de porc de l'usine de Saint-Elzéar. Etudier la flore mésophile et thermophile présente dans la mousse et la partie liquide contenue dans le réacteur; suivre l'implantation et l'évolution de la flore microbienne dominante et active. Caractériser le ou les microorganismes dominants. Etudier la présence de certains organismes pathogènes. Etudier la formation d'un biofilm sur des surfaces fixes incorporées dans le réacteur. Etudier la stabilité et la conservation des bactéries actives lors de leur entreposage.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

$38 000

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 03*

## 0303-9

Beaudet, R
Bisaillon, J
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Dépollution microbiologique du lisier de porc - Traitement aérobie thermophile**

Ce projet s'intéresse à l'aspect microbiologique du traitement aérobie du lisier de porc et plus particulièrement au développement d'un procédé thermophile particulièrement efficace. Ce procédé est étudié dans des réacteurs avec ou sans surfaces fixes et permet d'obtenir la stabilisation du lisier et l'élimination de l'azote ammoniacal par 'stripping' en une seule étape.

Financing/*Financement:* Québec, ministère de l'Environnement

## 0303-10

Beerli, M
(819) 562-7979

Coratel Ltée

**Essais pilotes de réduction des rejets d'azote ammoniacal pour prévenir les surcharges azotées dans les eaux souterraines.**

Vérifier par des essais pilotes le bien fondé des conclusions et recommandations de l'étude de préfaisabilité technico-économique de récupération des rejets d'azote ammmoniacal émis à l'atmosphère par le procédé aérobie de traitement du lisier de porc de l'usine de Saint-Elzéar.

Financing/*Financement:* Québec, ministère de l'Environnement

$63 800

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 03*

## 0303-11

Beerli, M
(819) 562-7979

Coratel Ltée

**Réduction des rejets d'azote ammoniacal pour prévenir les surcharges azotées dans les eaux souterraines.**

Réaliser une étude de préfaisabilité technico-économique de récupération des rejets à l'atmosphère d'azote ammoniacal libéré par le procédé de traitement du lisier de porc à l'usine de Saint-Elzéar.

Financing/*Financement:* Québec, ministère de l'Environnement

$26 310

**START/*DÉBUT***: *1988 02* ***END/FIN***: *1988 06*

## 0303-12

Bernier, Y
(819) 478-8191

Hamel, Beaulieu et Ass. Ltée

**Mise sur pied de projets de démonstration de valorisation agricole sur les effets agronomiques et environnementaux des boues d'épuration.**

Démontrer les effets bénéfiques de la valorisation agricoles des boues afin d'inciter les agriculteurs et les populations rurales à accepter le recyclage de ce produit. Des boues solides et liquides sont valorisées sur 3 types de sol et 3 types de culture. Une stratégie de promotion est aussi proposée.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$134 980
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 03*

## 0303-13

Blakeman, W
(819) 953-1105

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental protection criteria - coal mining preparation (PERD project 24201)**

To identify sources of wastes, identify and quantify contaminants and identify and assess in place and potentially emerging pollution abatement technologies at Canadian coal mining and preparation facilities, with respect to liquid effluents, particulate and gaseous air emissions and the management of solid wastes.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$792 500

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1990 03*

## 0303-14

Blakeman, W
Paine, P
(819) 953-1105

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of status and environmental implications of emerging advanced coal cleaning technologies**

To identify emerging advanced physical, chemical and biological coal cleaning technologies in U.S., Canada and world wide. To identify and assess their commercialization potential and the environmental implications of the processes themselves vis à vis their effectiveness in reducing SO2 emissions from U.S. and Canadian combustion sources.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Conservation and Protection

$200 000

**START/*DÉBUT***: *1986 12* ***END/FIN***: *1991 06*

## 0303-15

Boadway, J
(613) 545-2122

Department of Civil Engineering; Queen's University

**Grit Removal at Sewage Treatment Plants Using a Low Pressure Hydrocyclone**

To develop a low pressure and efficient hydrocyclone suitable for grit removal from raw sewage.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$27 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 10*

## 0303-16

Bolton, J
(519) 661-2170

University of Western Ontario; Department of Chemistry

**Photochemical removal of organic pollutants by aqueous TiO2 (antatase) suspensions**

To study the mechanism of the photochemical degradation of organic pollutants (such as methylene, chloride, chlorobenzene and other chlorohydrocarbons) in aqueous suspensions of titanium dioxide.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$46 500

## 0303-17

Bouchard, R
(418) 547-5716

Techmat (1989) Inc.

**Etude des discontinuités du parement d'argile et de silt dans les étangs aérés et proposition de méthodes préventives ou correctives.**

Préciser, dans les étangs aérés munis d'écrans imperméabilisants (en argile compactée ou en mélange sol-bentonite) le processus de formation des fissures dans la zone hors de l'eau au printemps; étudier également les discontinuités sous le niveau de l'eau, celles-ci entraînant des exfiltrations excessives. Proposer des méthodes préventives ou correctives; étudier la possibilité de colmatage par bentonite en suspension afin de réduire les débits d'exfiltrations et de préciser les limites d'application de cette technique.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Laroque Géotek Inc.

$100 205

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1990 06*

## 0303-18

Brière, F
(514) 340-4800

Ecole polytechnique de Montréal; Département de génie civil

**Efficacité des systèmes d'épuration par boues activées au Québec.**

La recherche s'attarde principalement à l'étude des systèmes opérant en discontinu et à l'observation de la nitrification dans les systèmes opérant aussi bien en continu qu'en discontinu. L'enlèvement de l'azote organique nécessite sa transformation biologique en nitrites et en nitrates (nitrification) puis sa dénitrification biologique (NO3-N2). Or les travaux en cours ont montré que la transformation de l'azote organique en nitrates ne se réalise pas aux conditions de température froides du Québec. Un but de la recherche est de déterminer à quelles températures et dans quelles conditions la nitrification cesse. L'enlèvement du phosphore par précipitation chimique ne rencontre pas tous les objectifs escomptés et l'intérêt se développe envers les possibilités de la déphosphatation biologique.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$51 000
**START/*DÉBUT***: *1986* ***END/FIN***: *1990*

## 0303-19

Buelna, G
Bélanger, G
(418) 862-6356
Centre de recherche Premier; Section Environnement

**Système de biofiltration à base de tourbe pour le traitement des eaux usées des résidences isolées.**

Démontrer la faisabilité de ce système pour les résidences isolées en contexte québéquois. Le système conventionnel (fosse septique + champ d'épuration) est remplacé par un système de biofiltration à base de tourbe qui vient remplacer le champ d'épuration et ce, sur une superficie beaucoup moindre.

Financing/*Financement:* Centre québécois de valorisation de la biomasse
Québec, ministère de l'Environnement
Les Tourbières Premier Ltée
$183 351
**START/*DÉBUT***: *1989 06* ***END/FIN***: *1990 05*

## 0303-20

Buelna, G
Bélanger, G
(418) 862-6356
Centre de recherche Premier; Section Environnement

**Mise au point d'un biofiltre à base de tourbe pour l'épuration des eaux usées de petites municipalités.**

Mettre au point un système de filtration biologique qui répond aux critères de simplicité, d'efficacité et de faibles coûts d'investissement et d'opération. La première phase du programme est consacrée à l'étude (sur biofiltres pilotes de 0, 5 et 1, 0m3) des variables suivantes: type de tourbe, granulométrie, colmatage du filtre, débit à traiter, hauteur du lit fitrant, durée du cycle de filtration, efficacité épuratoire à long terme, influence des variations de charge et longévité du biofiltre.

Financing/*Financement:* Centre québécois de valorisation de la biomasse
Société québécoise d'assainissement des eaux
Les Tourbières Premier Ltée
$337 040
**START/*DÉBUT***: *1988 09* ***END/FIN***: *1989 08*

## 0303-21

Bull, G
Hyslop, W
(604) 682-8777
Nova Tec Consultants Inc.

**Assessment of Takla Landing contour trench ground disposal system - biomat performance**

To study biomat development and performance on natural soil, imported sand and geotextile cloth leading to more refined design criteria for the ground disposal of septic tank effluent under adverse site conditions. Final report due Nov. 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection
Canadian Mortgage & Housing Corporation
$19 337
**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 11*

## 0303-22

Campbell, H
(416) 336-4717
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Thermal characterization of sludge stability**

To assess the capability of thermal analytical techniques (TGA, DTA, DSC) to characterize sewage sludge stability.

Financing/*Financement:* Environment Canada, Conservation and Protection
$50 000
**START/*DÉBUT***: *1985* ***END/FIN***: *ongoing*

## 0303-23

Campbell, H
(416) 336-4717
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Process control - sludge conditioning/dewatering**

To develop an instrument to automatically control polymer addition to a belt press. Several papers are available from the project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection
$400 000
**START/*DÉBUT***: *1975* ***END/FIN***: *1987 03*

## 0303-24

Chahal, D
(514) 687-5010
Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Développement d'un procédé pour la diminution microbiologique de la pollution causée par du lisier**

Le but du projet est de développer des techniques et des conditions optimales de fermentation pour éliminer les polluants présents dans le lisier et en même temps de produire la nourriture utilisable pour les animaux.

Financing/*Financement:* Québec, ministère de l'Environnement
$40 000

## 0303-25

Chapman, D
(416) 336-4621
Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Secondary clarifier investigations**

To plan, coordinate and monitor international research activities relating to the design and operation of secondary clarifiers. Interim report: Field Test Protocol for Developing Secondary Clarifier Rating Curves.

Financing/*Financement:* United States Environmental Protection Agency

Environment Canada, Conservation & Protection

$109 700

**START/*DÉBUT***: *1987 05* **END/FIN**: *1990 05*

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## 0303-26

Chapman, D
(416) 336-4621

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Evaluation of phosphorus removal at full-scale plants**

To recommend the most cost-effective means for improving phosphorus removal at municipal treatment plants in Ontario and to propose basin-wide phosphorus management strategies. This project is now complete. Reports - 'Phosphorus Removal Efficiency Upgrading at Municipal Wastewater Treatment Plants in the Great Lakes Basin' (Phases 1 to 3 and Summary) were released in Feb. 1988.

Financing/*Financement:* Canada Ontario Agreement

Ontario Ministry of Environment

Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT***: *1986 00* **END/FIN**: *1987 10*

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## 0303-27

Chapman, D
(416) 336-4621

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Upgrading municipal sludge digesters (full-scale anaerobic)**

To optimize full-scale anaerobic digester mixing conditions and to examine the potential for increasing volumetric organic loading rates. Report: 'Anaerobic Sludge Digester Tracer Studies to Assess Alternative Mixer Configurations' is available.

Financing/*Financement:* Environment Canada, Conservation and Protection

$25 000

**START/*DÉBUT***: *1983 00* **END/FIN**: *1987 04*

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## 0303-28

Chapman, D
(416) 336-4621

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Statistical evaluation of performance data**

To evaluate and develop techniques for characterizing wastewater treatment processes with respect to both conventional and trace pollutants. Reports completed: 'Graphical Methods for Presenting and Analyzing Environmental Data', 'Evaluation of Estimates of Phosphorus Concentrations and Loadings from Ontario Wastewater Treatment Plants' and 'Management and Analysis of Data from Petroleum Refinery Wastewater Treatment Plants'.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$89 600

**START/*DÉBUT***: *1985* **END/FIN**: *1989*

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## 0303-29

Chisholm, P
(519) 824-4120

University of Guelph; School of Engineering

**Fish waste production - rainbow trout**

To develop a preliminary model to estimate waste production from rainbow trout culture facilities, in relation to fish growth. Test the preliminary waste production model based upon sampling of wastes produced by actual fish populations at selected growth stages.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$22 900

**START/*DÉBUT***: *1988 04* **END/FIN**: *1990 03*

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## 0303-30

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of free cyanide from photolysis of waste waters**

Techniques have been developed for studying the release of free cyanide, under natural conditions, from waste water samples. These samples which contain metal-cyanide complexes are non-toxic to fish in laboratory bioassays, but exhibit a rapid release of cyanide in summer sunlight. Chemical species involved in this photolysis can now be measured directly and rapidly by ion chromatography.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

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## 0303-31

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of cationic polyelectrolytes**

An original method has been developed for cationic polyelectrolytes in waste water samples using gel filtration and conductivity/UV detection. Waiting to do more evaluation on real samples.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

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## 0303-32

Cluis, D
(418) 654-2535

Université du Québec; INRS-eau

**Evaluation de la contribution à la contamination des eaux causées par l'élevage bovin.**

A court terme développer un logiciel permettant d'évaluer la contribution relative des amas de fumier, des eaux usées de laiteries de ferme et des cours d'exercice à la pollution de l'eau dans une représentation graphique absolue et relative. A moyen terme, évaluer les contributions de l'épandage des fumiers et de l'érosion du sol et cartographier les exploitations à hauts risques.

Financing/*Financement:* Québec, ministère de l'Environnement

$95 276

**START/*DÉBUT***: *1988 10* **END/*FIN***: *1991 03*

## 0303-33

Cluis, D
(418) 654-2535

Université du Québec; INRS-eau

**Couplage quantité-qualité du modèle hydrologique conceptuel CEQUEAU**

Etablir la relation entre l'utilisation du territoire et la qualité de l'eau des rivières qui le drainent. Le but est de juger l'efficacité relative des interventions agricoles, municipales et industrielles sur la qualité du milieu récepteur. Modèle opérationnel sur micro IBM-PC.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$32 000

**START/*DÉBUT***: *1986* **END/*FIN***: *1988*

## 0303-34

Coleman, R
Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Microbiological processes in waste management**

To study and provide data/information on domestic, industrial and agricultural wastes using microbiological processes and systems.

Financing/*Financement:* Alberta Agriculture

Alberta Technology Research & Telecommunications

Alberta Environment

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1991 12*

## 0303-35

Cournoyer, M
(514) 584-2207

Urgel Delisle et Associés

**Epuration des eaux de laiteries et de ruissellement à la ferme.**

Développement et mise au point de techniques d'épuration des eaux de lavage provenant des laiteries de ferme de même que certaines eaux contaminées par le contact avec du fumier solide. Des essais seront réalisés sur 3 fermes dont deux seront équipées d'une fosse septique avec trappe à graisse et champ d'épuration, l'un drainé, l'autre non drainé souterrainement. La troisième sera équipée d'un purot recueillant toutes les eaux de lavage et les eaux de ruissellement contaminées.

Financing/*Financement:* Québec, ministère de l'Environnement

$144 300

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1991 03*

## 0303-36

Cournoyer, M
Harvey, M
(514) 584-2207

Urgel Delisle et Associés

**Développement des modalités de conception et d'exploitation des systèmes cour d'exercice-réservoir tampon-filtre végétal pour bovins.**

Disposer d'une méthodologie simple et détaillée applicable partout au Québec selon les besoins des agriculteurs et assurant un rejet incontrolé minimal dans l'environnement. Elaborer les critères de conception, de réalisation et d'exploitation avec leur justification, un guide technique avec exemples variés et des recommandations relatives au suivi environnemental des aménagements.

Financing/*Financement:* Québec, ministère de l'Environnement

$64 132

**START/*DÉBUT***: *1989 10* **END/*FIN***: *1990 03*

## 0303-37

Couture, M
(514) 337-1205

Aquatech; Société de gestion de l'eau Inc.

**Recherche sur les effets de l'entreposage des boues d'épuration et comparaison des valeurs fertilisantes**

Déterminer les effets d'un entreposage à long terme sur la valeur fertilisante de boues liquides et de boues déshydratées; Comparer ensuite, la valeur fertilisante des boues liquides et des boues déshydratées, ayant été entreposées ou non, sur des cultures de mais et sur des prairies.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$238 984

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1989 06*

## 0303-38

Crawford, P
(416) 639-6320

Zenon Environmental Inc.; Process System

**Demonstration of Automated Jar Tester**

1. To demonstrate and evaluate the automated jar tester in 'tracking' operation at water treatment plants. 2. To evaluate the operational data collected, and assess the technical and economic impact of the automated jar test control system on plant operations. 3. To recommend the most appropriate system configuration for on-line demonstration in subsequent phases.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$36 600

**START/*DÉBUT***: *1987 09* **END/*FIN***: *ongoing 2]198803*

## 0303-39

Cullimore, D
(306) 584-4556
Regina Water Research Institute

**Monitoring microbial activity in lab anaerobic filters treating septic tank effluent at low temperatures**

By monitoring the dynamic microbiological processes taking place as the biofilm develops on both plastic and geosynthetic media contribute to the understanding of basic phenomena leading to the design of improved anaerobic septic tanks effluent filters under Canadian climatic conditions. Final reports unpublished by the sponsor - 'Monitoring Microbial Activity in Laboratory Anaerobic Filters Treating Septic Tank Effluent at Low Temperatures', RWRI Report Number 54, Dec. 1987 and 'A Statistical Interpretation of the Microbial Activity in Laboratory Septic Tank Effluent Filter Reactors at Low Temperature', RWRI Report Number 56, Mar. 1988. Both reports by Dr. D. Cullimore and staff at Regina Water Research Institute, University of Regina.

Financing/*Financement:* Environment Canada, Conservation & Protection

$13 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1988 03*

## 0303-40

Davies, J
(403) 632-6761
Alberta Environmental Centre

**Fungal decolourization of pulping effluents**

Reduction of colour in kraft bleach plant effluents prior to release to surface waters. Also reduction of organically-bound chlorine (AOX) by biological means.

Financing/*Financement:* Alberta Environmental Centre

$350 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0303-41

de la Noüe, J
(418) 656-3952
Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Biotraitement d'un effluent anaérobie de lisier de porc par culture de microalgues**

But: obtenir, pour le lisier de porc, un effluent final qui peut être rejeté dans l'environnement. Objectifs: 1- Caractériser l'effluent anaérobie; 2- Comparer les performances d'épuration et de production de biomasse sur un tel effluent; 3-Optimiser les conditions de culture pour l'espèce la plus performante.

Financing/*Financement:* Agence française pour la maîtrise de l'énergie

Elf-Aquitaine

$30 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1989 12*

## 0303-42

de la Noüe, J
Bélanger, G
(418) 656-3952
Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Assainissement des eaux usées par étang d'oxydation: influence des facteurs physiques et chimiques sur la croissance des microalgues**

But: cerner les principaux facteurs susceptibles d'influencer les populations d'algues dans un étang d'oxydation. Objectifs: 1- suivre les conditions physiques et chimiques d'un étang d'oxydation (St-Etie[illegible]e de Lauzon) sur une base annuelle; 2- mesurer la productivité primaire sous diverses conditions; 3- identifier les espèces présentes de phytoplancton et leur succession; 4- évaluer la performance de rendement épuratoire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$55 000

**START/*DÉBUT***: *1985 09* ***END/FIN***: *1988 02*

## 0303-43

de la Noüe, J
Cauchon, N
(418) 656-3952
Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Fermenteur aérobie à films fixes pour le traitement du lisier de porc.**

Obtenir une oxydation aussi complète que possible et rapide du lisier de porc avec une dépense énergétique relativement faible, à l'aide d'un digesteur conçu pour installation à la ferme. Caractériser la population microbienne à l'oeuvre dans un digesteur aérobie multistades à films fixes opérant avec du lisier décanté de porc; tenter d'obtenir un fonctionnement en conditions auto-thermophiles;optimiser le fonctionnement du digesteur.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

Canada, ministère de l'Agriculture

$77 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 03*

## 0303-44

de la Noüe, J
Cyr, B
(418) 656-3952
Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Digesteur aérobie multistades à films fixes pour le traitement du lisier de porc**

But: mettre au point et optimiser un système de digestion aérobie du lisier de porc. Objectifs: 1- Concevoir et installer à la ferme un digesteur aérobie; 2- Caractériser les paramètres d'opération d'un tel digesteur; 3-Caractériser les populations microbiennes fixées à l'oeuvre; 4- Caractériser la

composition de la biomasse microbienne en vue d'un recyclage en alimentation animale.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Agriculture

Conseil des recherches en agro-alimentaire et pêcheries du Québec

$102 500

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1990 06*

## 0303-45

de la Noüe, J
Murray, P
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Evaluation à l'échelle pilote d'un aérateur à cheminement prolongé**

But: concevoir et caractériser les performances d'un aérateur simple, peu coûteux et efficace pour la digestion d'effluents chargés. Objectifs: 1- Concevoir un nouveau type d'aérateur; 2- Etablir les paramètres d'opération d'un tel aérateur; 3- Vérifier sa performance avec le lisier de porc.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$12 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 09*

## 0303-46

de la Noüe, J
Sérodes, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Biotraitement des pollutions et biotechnologie solaire.**

Exploiter le potentiel des cultures de microalgues pour fins de dépollution. Mettre au point des systèmes biotechnologiques efficaces de dépollution des effluents d'origine urbaine; optimiser la production de biomasses de microalgues par biotechnologie solaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$204 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1988 10*

## 0303-47

de la Noüe, J
Sérodes, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Epuration des eaux usées urbaines par algues bioflo-culantes**

But: mettre au point un système opérationnel de traitement tertiaire des eaux usées domestiques par culture de microlagues. Objectifs: 1- Sélectionner les algues (mélange) les plus performantes; 2- Etablir les conditions optimales avec un mélange d'algues filamenteuses; 3- Vérifier sur le terrain l'efficacité d'épuration (N, P) du système.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$130 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1988 10*

## 0303-48

de la Noüe, J
Talbot, P
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Valorisation d'effluents polluants et production de biomasse par culture d'une cyanophycée filamenteuse: aspects fondamentaux et appliqués**

Mettre au point un système de biotraitement tertiaire du lisier de porc par culture de microlagues. Caractériser le comportement physiologique de Phormidium bohneri sous diverses conditions de lumière et de température et la biomasse obtenue (composition). Enfin, mettre au point un système de culture sur le terrain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Centre de recherche pour le développement international

Fonds pour la formation des chercheurs et l'aide à la recherche

$76 500

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1990 12*

## 0303-49

Delagrave, M
Gosselin, Y
n. disponible

Roche Ltée; Groupe Conseil

**Elaboration d'une méthodologie de définition des intensités de précipitation pour le contrôle des déversements.**

Réaliser une revue bibliographique des approches et méthodes de calcul existantes, une analyse de ces méthodes et le choix d'une approche, l'élaboration d'un programme informatisé, la calibration et validation des résultats pour quelques stations météorologiques; procéder à l'examen des données disponibles aux différentes stations météorologiques de la province, valider les données, établir des courbes intensité, durée, fréquence pour chaque station. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$35 000

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1989 02*

## 0303-50

Desjardins, R
(514) 340-4505

Ecole polytechnique de Montréal; Département de génie civil

**Etude sur l'utilisation de collecteurs d'égout pour l'élimination des neiges usées.**

Evaluer la quantité de neige que les eaux d'égout unitaire peuvent fondre. Ces eaux circulent dans le réseau de collecteurs de la ville de Montréal et dans le réseau d'intercepteurs de la Communauté urbaine de Montréal. Il faut aussi évaluer à quel endroit la neige doit être déversée pour que la fonte soit complétée avant d'arriver à la station d'épuration de la CUM.

Financing/*Financement:* Communauté urbaine de Montréal

$200 000

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1987 09*

## 0303-51

Desjardins, R
(514) 340-4505

Ecole polytechnique de Montréal; Département de génie civil

**Optimisation de l'utilisation de collecteurs et d'intercepteurs pour le déneigement**

Etablir le bilan thermique des eaux usées et leur capacité à transporter et fondre les neiges usées en fonction du débit et de la température des eaux usées, du volume de chargement dans le réseau d'intercepteurs et de la distance admissible de la station d'épuration pour que la température finale des eaux usées dans le puits de succion de la station de pompage ne soit pas inférieure à 2 degré C. L'incidence de cette opération sur l'exploitation du traitement physico-chimique de la station d'épuration a aussi été évaluée.

Financing/*Financement:* Québec, ministère de l'Environnement

Communauté urbaine de Montréal

$240 000

**START/*DÉBUT*:** *1984 06* **END/FIN:** *1987 02*

## 0303-52

Desjardins, R
Blanchard, B
(514) 340-4505

Ecole polytechnique de Montréal; Centre de développement technologique

**Mise au point de la méthode proposée dans le guide technique sur la mauvaise décantation des boues activées, dans une usine d'épuration des eaux.**

Mettre en évidence les causes des problèmes de la mauvaise décantation par une étude approfondie et détaillée du fonctionnement d'une usine: caractérisation de l'alimentation, caractérisation du procédé de traitement, l'efficacité des ouvrages et des équipements, l'analyse microscopique de la liqueur mixte et l'identification des bactéries filamenteuses.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

$40 000

**START/*DÉBUT*:** *1989 10* **END/FIN:** *1990 04*

## 0303-53

Desjardins, R
Blanchard, B
(514) 340-4505

Ecole polytechnique de Montréal; Département de génie civil

**Guide technique sur les causes et le contrôle de la mauvaise décantation des boues activées.**

Elaboration et conception d'un guide technique dont l'approche rationnelle permet de trouver des solutions aux problèmes de mauvaises décantations dans les réacteurs biologiques lors du traitement des eaux usées.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$39 421

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1988 06*

## 0303-54

Droste, R
(613) 564-3348

University of Ottawa; Civil Engineering

**Anaerobic and air stripping wastewater treatment**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$115 640

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1991 03*

## 0303-55

Dubé, J
Piché, R
(514) 455-1921

ETA Consulteaux

**Elaboration d'un guide technique portant sur la conception des installations septiques communautaires.**

Créer un guide technique dont les grandes lignes seraient: les sols comme milieu de traitement, évaluation du site et de la capacité de charge du sol, choix en fonction des caractéristiques du site, collecte gravitaire ou sous faible pression; également, l'installation septique: principe de fonctionnement et nature du procédé de traitement, conception, dosages de l'effluent, les éléments épurateurs, construction, exploitation, coûts. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$65 000

**START/*DÉBUT*:** *1988 12* **END/FIN:** *1989 07*

## 0303-56

Dumontier, M-A
(514) 866-5541

Pâques-Lavalin Environnement

**Digestion anaérobie des effluents de Papier Cascades (Cabano) Inc. Essaipilote**

Vérifier la performance d'un traitement anaérobie des effluents de l'usine; vérifier le comportement du système face

aux pertubations rencontrées; définir les critères de conception pour une usine de traitement du total des effluents.

Financing/*Financement:* Québec, ministère de l'Environnement

Société québécoise d'assainissement des eaux

$150 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1987 11*

## 0303-57

Dutil, C
(418) 871-8151

Les Consultants BPR

**Développement d'un logiciel d'aide à la gestion des fumiers de bovins laitiers.**

Fournir aux professionnels et aux conseillers en environnement agricole un outil informatique leur permettant d'orienter plus judicieusement le producteur dans le choix d'une chaîne de gestion individualisée pour les fumiers; cette chaîne de gestion économique favorise la protection de l'environnement et l'utilisation optimale des fumiers à des fins agronomiques.

Financing/*Financement:* Québec, ministère de l'Environnement

$200 245

**START/*DÉBUT***: *1989 01* ***END/FIN***: *1991 03*

## 0303-58

Dutil, C
(418) 871-8151

Les Consultants BPR

**Etude technico-économique des matériaux et structures pour les toitures des fosses à lisier.**

Identifier un ou des types de toitures efficaces et rentables pour les fosses à lisier. Evaluer les coûts supplémentaires encourus lors du stockage des eaux de précipitation. Déterminer un seuil de rentabilité. Inventorier les matériaux associés aux structures les plus économiques et les plus efficaces. Déterminer les structures idéales.

Financing/*Financement:* Québec, ministère de l'Environnement

$9 490

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1989 03*

## 0303-59

Dutil, C
(418) 871-8151

Les Consultants BPR

**Evaluation des épandeurs à lisier utilisés au Québec.**

Produire des fiches techniques et de performance des épandeurs à lisier utilisés au Québec: caractéristiques physiques, doses d'application, pression au sol. Proposer des modifications pour les rendre aptes à l'épandage post-émergence. Vérifier la faisabilité technique et économique des modifications proposées.

Financing/*Financement:* Québec, ministère de l'Environnement

$34 345

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1989 09*

## 0303-60

Ferguson, K
(604) 666-2399

Environment Canada; Conservation and Protection; Environmental Protection

**The export of nutrients from surface coal mines**

To quantify the release of nitrogen and phosphorus from surface coal mines in southeast British Columbia. To develop a predictive model for use at other minesites in Canada. Draft report prepared, final report by March 1988.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Industry

$130 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 03*

## 0303-61

Fisher, D
(416) 445-3600

Proctor & Redfern Limited

**Kirkland Lake Water Treatment Plant Alternative Process Research**

1. To study and compare alternative high rate pre-treatment processes with each other and with known operating data from other plants using conventional low rate systems. 2. To study alternative coagulants on Northern Ontario waters.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$69 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1987 07*

## 0303-62

Foy, E
(519) 986-2831

Village of Markdale

**Treatment of Municipal Sewage Lagoon Effluent by Means of Rapid Infiltration at Markdale**

Variable hydraulic loading of infiltration basins will be used to develop an appropriate loading cycle. This will result in: a) operational utilization of each basin, b) provide maximum treatment of infiltrated municipal sewage lagoon effluent, and c) protection of surface water.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$25 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 04*

## 0303-63

Gehr, R
Cailas, M
(514) 398-6861

Université Mc Gill; Département de génie civil

**Statistical analysis of biodegradation, with emphasis on respirometry**

The biodegradation of materials is conveniently measured by respirometry. Automated instruments enable one to acquire closely-spaced time-dependent data. Methods for statistical analysis data are not well developed. The objective of this project is to develop statistical methods to a) rigously determine the parameters of a suitable model to adequately describe the data, and b) to compare data sets obtained under various predetermined conditions. Excellent progress has been made so far, and it appears that rate models, rather than cumulative models, are most appropriate. Comparisons by means of the Jackknife procedure offer the most promise. Also plan to develop an automated respirometer with advanced control features.

Financing/*Financement:* Fonds institutionnel de recherche

Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$31 400

**START/*DÉBUT***: *1983*

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## 0303-64

Gehr, R
Soponkanaporn, T
(514) 398-6861

Université McGill; Département de génie civil

**Evaluation of polyelectrolyte behaviour and degradation by size exclusion chromatography (SEC).**

Polyelectrolytes, especially those which are acrymalide based, are widely used in water and wastewater treatment. This project involved the development of a chromatographic method - specifically chromatography - for assessing the molecular weight distribution of high molecular weight, cationic polyelectrolytes. This method was then used to study in particular the effects on the polyelectrolyte of chlorination, ozonation, and biodegradation. The method is now also available for studying changes in the polyelectrolyte through unit treatment processes, and it is hoped it will investigate full-scale applications in the near future. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$80 000

**START/*DÉBUT***: *1985*

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## 0303-65

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Biodégradation des cyanures dans les environnements miniers.**

Sélection et adaptation de souches bactériennes indigènes à la dégradation des cyanures des effluents de mines d'or.

Financing/*Financement:* Fonds personnel

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## 0303-66

Hall, E
(416) 336-4546

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Biological treatment of contaminated groundwaters**

To develop a Conservation & Protection program that applies biological methods of treatment to contaminated groundwaters.

Financing/*Financement:* Environment Canada, Conservation & Protection

$7 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *ongoing*

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## 0303-67

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Biological treatment of pulp and paper wastewater**

Develop and demonstrate biological treatment technologies for reducing BOD, aquatic toxicity, and organochlorines in pulp and paper wastewaters. Reports available from E. Hall.

Financing/*Financement:* Ontario Ministry of Environment

Environment Canada, Conservation & Protection

Ministry of State for Science & Technology Biotechnology Program

Panel on Energy Research & Development

$388 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *ongoing*

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## 0303-68

Hall, E
(416) 336-4715

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**PAPRICAN - WTC anaerobic treatment study**

Assess anaerobic treatability and toxicity reduction for TMP effluent after whitewater system closure.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Pulp and Paper Research Institute of Canada

$290 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1989 04*

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## 0303-69

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Anaerobic treatment technology transfer and demonstration**

Develop and demonstrate novel high rate anaerobic process technologies for treating concentrated organic wastewaters, and to transfer technical information to potential users of anaerobic treatment systems. Reports available from E. Hall.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

$93 000

**START/*DÉBUT***: *1981* **END/FIN**: *ongoing*

## 0303-70

Hall, E
(416) 336-4715

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Anaerobic pretreatment of industrial wastewater, discharge to municipal WPCP**

Assess potential of anaerobic pre-treatment of industrial park effluent at Portage la Prairie, Manitoba, prior to discharge to a municipal treatment facility.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

Manitoba Water Services Board

$298 000

**START/*DÉBUT***: *1986 02* **END/FIN**: *1987 10*

## 0303-71

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Process monitoring and control for anaerobic treatment systems**

Development and demonstration of automated monitoring and control strategies for maintaining process performance efficiency during anaerobic treatment of inhibitory industrial wastewaters.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ministry of State for Science and Technology Biotechnology Program

$288 500

**START/*DÉBUT***: *1986 00* **END/FIN**: *1990 12*

## 0303-72

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Anaerobic treatment of complex industrial wastewaters**

Develop anaerobic treatment technology for application to toxic and inhibitory industrial wastewaters. Reports available from E. Hall.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ontario Ministry of Environment

Ministry of State for Science and Technology Biotechnology Program

$1 057 000

**START/*DÉBUT***: *1984 00* **END/FIN**: *1989 03*

## 0303-73

Halliday, P
(416) 445-3600

Proctor & Redfern Group

**Applying New Technology for Defluoridation of Water Supply Systems**

Review the literature and evaluate, on a pilot plant scale, the use of activated alumina for the removal of fluoride under various temperature, flow and regeneration conditions including reverse osmosis.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$13 000

**START/*DÉBUT***: *1985 03* **END/FIN**: *1985 11*

## 0303-74

Hayduk, W
(613) 564-4095

University of Ottawa; Chemical Engineering

**High pressure phase equilibria and processes for gases in liquids; processes for treatment of industrial wastewater**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$127 904

**START/*DÉBUT***: *1985 04* **END/FIN**: *1991 03*

## 0303-75

Hébert, J
(819) 821-7753

Université de Sherbrooke; Département de génie civil

**Traitement combiné des eaux de lixiviation de lieu d'enfouissement sanitaire mélangées à des eaux usées domestiques par un système de boues activées**

Etudier l'effet d'un déversement contrôlé de lixiviat dans une station d'épuration par boues activées sur la qualité de l'effluent et des boues. Trouver le taux de déversement optimal. Thèse.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

$13 600

## 0303-76

Hébert, M
Lavoie, Y
(418) 681-6931

Biorex G.C. Inc. - Aquaterre Inc.

**Etude de la faisabilité technico-économique du compostage à la ferme de fumier de bovin.**

Vérifier l'hypothèse selon laquelle la transformation du fumier à la ferme par un procédé de compostage peut présenter divers aventages des points de vue agronomique, environnemental et économique. Procéder à une revue critique et à une description détaillée des techniques de compostage applicables dans les conditions québécoises, en analyser les avantages, les inconvénients et les coûts. Réa-

liser la conception préliminaire d'une unité type utilisant le ou les procédés identifiés et une analyse détaillée coûts-bénéfices.

Financing/*Financement:* Québec, ministère de l'Environnement

$117 130

**START/*DÉBUT*:** *1989 02* **END/FIN:** *1991 09*

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## 0303-77

Herskowitz, J
not available

Scientist

**Colborne WPCP Nitrification - De-Nitrification Process Study**

Development of a low cost Nitrification - De-Nitrification Sewage treatment process

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$63 000

**START/*DÉBUT*:** *1986 01*

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## 0303-78

Hoffman, J
(306) 787-6198

Saskatchewan Environment and Public Safety

**Seepage monitoring at sewage lagoons by IR photography**

To monitor seepage impacts at municipal lagoons through infrared photography.

Financing/*Financement:* Saskatchewan Environment and Public Safety

**START/*DÉBUT*:** *1983 07*

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## 0303-79

Holloran, R
(416) 671-2600

IEC Beak Consultants Ltd.

**Sediment transport study**

To predict longshore and across-shore suspended and bedload transport rates for varying sediment particle sizes under a range of known environmental conditions (spatial and temporal varying currents, waves and bathymetry). This will permit assessment of the short-term and long-term fates of contaminated sediment particles from sources such as rivers, sewage treatment plants and lakefilling.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$97 700

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1989 03*

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## 0303-80

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Development of a new process for removal of radium-226 from uranium tailings decants**

The objective of this project is to develop a new fluidized-bed process for the removal of radium-226 from uranium tailings decants. More specific objectives include optimization of the process to achieve an effluent radium-226 activity level of 10 pCi/L (0.37 Bq/L) at bench scale; construction & testing at pilot scale to confirm scale-up & obtain data for design of a full scale process; and to determine equipment requirements and costs for full scale processes.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Amok Ltd./Cluff Mining

$309 895

**START/*DÉBUT*:** *1984 03* **END/FIN:** *1988 09*

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## 0303-81

Jolicoeur, C
Beaubien, A
(819) 821-7565

Université de Sherbrooke; Département de chimie

**Application de la microcalorimétrie dynamique au contrôle de bioprocédés d'épuration anaérobies**

Les travaux de recherche visent à exploiter la relation existant entre l'activité métabolique et microorganismes et la quantité de chaleur dégagée en appliquant la microcalorimétrie dynamique au contrôle et à la régulation de bioprocédés anaérobies industriels.

Financing/*Financement:* Institut de recherche en biotechnologie

$261 340

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1987 09*

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## 0303-82

Kantardjieff, A
(819) 562-3871

Le groupe Teknika

**Etude sur les modes alternatifs de désinfection des eaux usées: étude bibliographique.**

Identifier les méthodes les plus adéquates, préparer une grille de sélection des procédés applicables, présenter une description technique des problèmes susceptibles de réduire la possibilité d'application d'une technique. Quelques procédés étudiés: les radiations ultraviolettes, l'ozone, la combinaison des UV avec l'ozone, l'utilisation de la chaux, l'utilisation du bioxide de chlore, la filtration tertiaire, les étangs aérés, l'irrigation des terres. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$6 100

**START/*DÉBUT*:** *1987* **END/FIN:** *1988 04*

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## 0303-83

Kantardjieff, A
(819) 562-3871

Le groupe Teknika

**Les disques biologiques pour le traitement des eaux usées des petites et moyennes municipalités.**

Identifier les éléments causant des problèmes au niveau de la conception et de l'exploitation; formuler des recommandations pour la conception adéquate de futures installations

de traitement: procédé, équipement et exploitation. Les informations ont été recueillies lors d'une recherche bibliographique et au cours de visites d'usines déjà en fonction. Les équipements disponibles sur le marché ont également été évalués. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$74 655

**START/*DÉBUT***: *1987* ***END/FIN***: *1989 04*

## 0303-84

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment technology of oil and gas offshore wastes (PERD project 67201)**

Characterize and evaluate performance and costs of available and practical technologies for the treatment of wastes from the offshore petroleum industry.

Financing/*Financement:* Panel on Energy Research and Development

$340 000

**START/*DÉBUT***: *1982 07* ***END/FIN***: *1986 12*

## 0303-85

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of toxic oil sands wastewater and tailing pond sludges (PERD project 24164)**

Assess and develop treatment technologies to treat toxic oil sand plant process wastewaters.

Financing/*Financement:* Panel on Energy Research and Development

$353 600

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1986 03*

## 0303-86

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Demonstration of membrane cleanup technology in the Atlantic Region**

Treat contaminated water streams using ultrafiltration and reverse osmosis at selected sites in New Brunswick and Nova Scotia.

Financing/*Financement:* Environment Canada, Conservation & Protection

$25 000

**START/*DÉBUT***: *1989 10* ***END/FIN***: *1989 11*

## 0303-87

Kelso, B
(604) 666-5193

Environment Canada; Conservation and Protection; Environmental Protection

**Study of nitrogen rich coal mine wastewater treatment and disposal alternatives**

To determine the feasibility of using biological methods (aquatic plants) for the treatment of nutrient enriched Canadian mine discharge waters. Report completed - 'Potential Coal Mine Wastewater Treatment Options'.

Financing/*Financement:* Department of Supply and Services Canada

Panel on Energy Research and Development

$50 000

**START/*DÉBUT***: *1985 10* ***END/FIN***: *1987 01*

## 0303-88

Kelso, B
(604) 666-5193

Environment Canada; Conservation and Protection; Environmental Protection

**Evaluation of nutrient removal from a synthetic wastewater by cattails (typha sp.)**

Quantify the removal of nitrogen and phosphorus from wastewater passing through experimental channels planted with rooted emergent vegetation. Final report published March 1987, 'Potential Coal Mine Wastewater Treatment Options II: Emergent Aquatic Plants'.

Financing/*Financement:* Panel on Energy Research and Development

$21 104

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1987 03*

## 0303-89

Kennedy, K
(613) 564-3432

University of Ottawa; Civil Engineering

**Advanced anaerobic reactors for wastewater treatment**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$43 416

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0303-90

Kosaric, N
(519) 661-3119

University of Western Ontario; Dept. of Chemical & Biochemical Engineering

**Research projects in biochemical and food engineering**

Projects include: anaerobic sludge granulation process treatment of industrial wastewaters in a pilot plant for treatment of pulp and paper wastes - study hydrodynamic conditions affecting performance of UASBRs; detoxification of in-

dustrial wastewaters with algae - removal and degradation of chlorinated hydrocarbons and develop a novel photobioreactor system with internal reactor illumination; breaking industrial emulsions with specific microbes of particular interest in enhanced oil recovery and petroleum industry. Reports and publications are available with some restrictions.

Financing/*Financement:* Paques Lavalin

Natural Sciences & Engineering Research Council

$494 758

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 01*

## 0303-91

Lagacé, R
(418) 656-2276

Université Laval; Département de Génie rural

**Epuration des eaux contaminées en provenance des cours d'exercices pour bovins par décanteur et filtre végétal.**

Concevoir et implanter un système d'épuration 'décanteur-filtre végétal'. Déterminer à moyen terme son efficacité. Optimiser les dimensions du bassin de décantation. Evaluer la qualité des fourrages pouvant être récoltés sur le filtre. Evaluer les dangers de contamination des nappes d'eaux souterraines. Choisir les pentes du filtre compte tenu des caractéristiques du sol.

Financing/*Financement:* Québec, ministère de l'Environnement

$138 545

**START/*DÉBUT*:** *1983 11* **END/FIN:** *1988 05*

## 0303-92

Laurin, M
(514) 641-3883

Thermonic

**Elimination et récupération du chrome des eaux de prodédés par catalyseur.**

Vérifiez à l'échelle industrielle la performance d'une nouvelle technologie d'élimination et de récupération de chrome hexavalent contenu dans les eaux de rinçage provenant d'une unité de placage. Le procédé d'interaction solide/liquide utilise un composé inorganique breveté qui ne requiert qu'un faible temps de contact pour éliminer le chrome des effluents.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

IREQ et Filochrome Inc

$95 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1988 11*

## 0303-93

Laurin, M
Soreau, P
(514) 641-3883

Thermonic

**Mise au point et démonstration (R/D et D) d'une technologie d'assainissement des eaux industrielles et de recyclage des métaux lourds et autres rejets chimiques industriels.**

Mise au point d'une nouvelle technologie simple et efficace de traitement des effluents industriels afin d'éliminer de ces eaux tout déchet organique et/ou inorganique solubilisé. Un second objectif est de récupérer et recycler ces produits chimiques ainsi que tout autre déchet chimique industriel. Rapport disponible.

Financing/*Financement:* Canada, ministère de l'Industrie, Science et Technologie

Canada, ministère de l'Environnement

Société québécoise d'assainissement des eaux

$4 400 000

**START/*DÉBUT*:** *1988 09* **END/FIN:** *1990 09*

## 0303-94

Lavallée, H
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Identification des polluants émis à la source lors de la fabrication de pâtes TMP et TCMP de bouleau.**

Faciliter le captage des polluants avant leur dilution et, par conséquent, leur réduction par un traitement adéquat. Favoriser l'utilisation du bouleau dans la préparation des pâtes.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$39 000

**START/*DÉBUT*:** *1989* **END/FIN:** *1990 04*

## 0303-95

Lavallée, H-C
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Traitement des effluents de pâtes TMP et TCMP au moyen de l'ultrafiltration.**

Evaluer les performances du procédé de l'ultrafiltration sur la réduction des polluants contenus dans les effluents de pâtes TMP et TCMP. Ces derniers proviendront d'une extraction effectuée à la source de leur fabrication, c'est-à-dire immédiatement à l'étape de préparation de la pâte aux raffineurs. On mesurera l'efficacité du procédé sur la réduction des polluants conventionnels et toxiques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1992 08*

## 0303-96

Lavallée, H-C
Lapointe, J
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Etude sur l'extraction à la source des polluants émis lors de la fabrication de pâtes thermochimicomécaniques de pin gris.**

Comparer quantitativement et qualitativement la quantité de polluants qui peuvent être extraits lors du processus de mise en pâte, avant leur dilution éventuelle dans le réseau

aqueux de l'usine. Cette possibilité permettrait un traitement moins onéreux et plus approprié des polluants toxiques et conventionnels.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

**START/*DÉBUT***: *1989 09* **END/*FIN***: *1990 12*

## 0303-97

Leduc, R
(514) 398-6675

Université Mc Gill; Département de génie civil

**Modélisation stochastique des étangs aérés facultatifs.**

Le but de la recherche est de développer des modèles stochastiques du type analytique pour prédire l'espérance et la variance des concentrations de matière organique à l'affluent d'étangs opérant en série pour la biodégradation de la matière organique d'origine municipale. Le modèle est calibré et vérifié en utilisant des données provenant des systèmes d'étangs des municipalités de Lac-Etchemin et de Sainte-Julie-de-Verchères.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$35 120

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

## 0303-98

Leduc, R
(514) 398-6675

Université Mc Gill; Département de génie civil

**Conception du système de boue activée à alimentation étagée et de sédimentation secondaire.**

Un modèle de biodégradation a été dérivé pour un nombre 'n' de stages pour le procédé de boue activée à alimentation étagée. Un modèle de sédimentation secondaire a été jumelé au premier, de sorte que les interactions entre les deux systèmes soient considérées. Un algorithme a été développé pour solutionner à l'ordinateur le système d'équations qui décrit ces modèles, de façon à faciliter la conception de ces systèmes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0303-99

Leduc, R
Gehr, R
(514) 398-6675

Université McGill; Dépt. de génie civil et de mécanique appliquée

**Revue bibliographique sur l'enlèvement des organismes coliformes dans les lagunes aérées facultatives.**

Examiner les facteurs abiotiques (température, irradiation solaire, Ph, oxygène dissous, les nutriments et la charge organique) et les facteurs biotiques (algues, prédateurs, bactériophages) qui influencent l'abattement des coliformes de contamination fécale. Examiner les modèles de cinétique, surtout ceux d'ordre un, ainsi que l'influence des divers facteurs sur le taux de cinétique. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$30 000

**START/*DÉBUT***: *1988* **END/*FIN***: *1989 04*

## 0303-100

Lefebvre, N
(819) 379-8010

Pluritec Assainissement Ltée

**Contrôle des transitoires hydrauliques dans les systèmes urbains de transport d'eau.**

Combler des incertitudes concernant l'ampleur des transitoires et l'influence des équipements en vue d'implanter des équipements de protection pour un système donné; pour ce faire, on tient compte des facteurs influençant l'ampleur des transitoires, des conditions d'installation, d'opération et d'entretien et des limites d'application de trois équipements courants de protection: les soupapes d'admission et d'échappement d'air, le réservoir hydropneumatique et la soupape de relâche. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$15 380

**START/*DÉBUT***: *1987* **END/*FIN***: *1989 04*

## 0303-101

Lega, R
(416) 235-5756

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Routine method for Analysis of Resin and Fatty Acids for the Paper and Pulp Industry**

To provide a routine method for the analysis of resin and fatty acids, targeting on the parameters required for MISA Paper and Pulp Industry.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$21 000

**START/*DÉBUT***: *1987 03*

## 0303-102

Lo, S
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Cuisson en phase vapeur de feuillus et d'essences à croissance rapide avec et sans recyclage de la liqueur résiduelle d'imprégnation.**

Réduire la pollution des rejets aqueux. Réduire la consommation d'énergie.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science

$45 000

## 0303-103

Lo, S-N
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Traitement biologique des effluents de pâtes TMP et TCMP.**

Evaluer les performances du traitement biologique par voie aérobie des effluents de la fabrication des pâtes TMP et TCMP. Déterminer les conditions optimales d'opération et la réduction des polluants conventionnels et toxiques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

**START/*DÉBUT*:** *1989 09* **END/*FIN*:** *1992 12*

## 0303-104

Logan, D
(416) 736-2100

Department of Biology; York University

**The Use of Various Bacterial Short-Term Tests to Screen Industrial Effluents for Mutagenic Activity**

To evaluate the suitability of the Fluctuation Assay for mutagenicity testing for various industrial sectors, to screen industrial aqueous effluents for mutagenic activity and to set the priority for such effluents, based on their mutagenic activity, for additional genotoxicity testing.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$12 000

**START/*DÉBUT*:** *1986 03* **END/*FIN*:** *1987 05*

## 0303-105

MacKay, W
(403) 492-2538

Department of Zoology; University of Alberta

**Role of benthic invertebrates in nutrient cycling in lakes (water pollution - effects)**

To determine the importance of bottom dwelling invertebrates in phosphorus & nitrogen cycling in lakes.

Financing/*Financement:* Alberta Environment Research Trust

$23 096 **END/*FIN*:** *1987 05*

## 0303-106

Malldry, C
(514) 488-8317

Université de Montréal; Département des sciences économiques

**Un modèle économique du contrôle de la pollution de l'eau par le biais d'un marché de permis.**

Améliorer des modèles économiques du contrôle de la pollution de l'eau sur le plan théorique, afin de les rendre plus réalistes et plus rigoureux. Test d'un modèle de simulation avec données sur la rivière St-Maurice avec la collaboration du ministère de l'Environnement (contact Jacques Gagnon). Un rapport du projet sera présenté en guise de conférence aux assises de l'AQTE en mars 1988.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Conseil de recherches en sciences humaines

$20 500 **END/*FIN*:** *1988 03*

## 0303-107

Masson, J
(418) 654-9600

(none given)

**Etude de faisabilité de la valorisation agricole des boues de la station d'épuration de la communauté régionale de l'Outaouais (CRO).**

Vérifier la faisabilité de la valorisation agricole y incluant la valorisation agricole, sylvicole, aménagement de sites dégradés des boues provenant des eaux usées municipales de la CRO et d'en définir les coûts et les modalités. L'étude évalue les différentes possibilités quant à la forme des boues, la période d'entreposage, les terres disponibles, la période de végétation, etc. et fait des recommandations en regard de la solution actuellement appliquée.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$86 875

**START/*DÉBUT*:** *1987 10* **END/*FIN*:** *1988 12*

## 0303-108

Mathieu, A
Gauthier, R
(819) 663-9294

Boileau et associés Inc.

**Etude des coûts d'immobilisation et d'exploration concernant les techniques actuelles de traitement des boues et des modes d'élimination finale**

Etablit les coûts d'immobilisation et d'exploitation pour divers procédés de traitement et de disposition des boues d'usines d'épuration pour différentes capacités d'usines, différentes distances de transport et différentes siccité des boues. Parmi les types de traitement de boues étudiés, mentionnons le conditionnement et l'épaississement, la stabilisation et la déshydratation. Les modes d'élimination étudiés sont la valorisation agricole et l'enfouissement.

Financing/*Financement:* Québec, ministère de l'Environnement

$435 000

**START/*DÉBUT*:** *1987 10* **END/*FIN*:** *1988 05*

## 0303-109

Mayers, R
n. disponible

Ecole polytechnique de Montréal; Centre de développement technologique

**Faisabilité et potentiel de biotraitement par réacteur biologique séquentiel (RBS) d'effluents urbains dilués.**

Evaluer la faisabilité d'un traitement par RBS; caractériser l'efficacité de l'opération; déterminer le potentiel d'utilisation d'un sélecteur dans le cycle d'opération; caractériser la séquence d'aération optimale pour l'opération; identifier les paramètres clefs qui contrôlent la performance; prédire l'évolution des concentrations en polluant résiduel (comme

C, N, Ph) dans le cas de variations dans les conditions d'opération.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

Centre québécois de valorisation de la biomasse

$190 068

**START/*DÉBUT*:** *1989 06* **END/FIN:** *1991 03*

## 0303-110

Melcer, H
(416) 336-4546

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Biofouling of fine pore diffusers**

Evaluate reasons for the creation of biofilms that are established on fine pore diffusers in activated sludge systems and methods of controlling the extent of biofouling.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

$192 000

**START/*DÉBUT*:** *1987 08* **END/FIN:** *1990 08*

## 0303-111

Melcer, H
(416) 336-4546

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Modelling of fate of contaminants in municipal wastewater treatment systems**

To create a user-friendly forecasting tool for municipal administrators to implement sewer use control strategies for the control of toxic trace contaminants.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$425 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1990 12*

## 0303-112

Melcer, H
(416) 336-4546

Wastewater Technology Centre; Environment Canada; Conservation & Protection

**Control Strategy for Dynamic Fluctuations in Trace Contaminants in Sewage Treatment Plant Effluents**

The overall objective is to develop a management strategy aimed at controlling the dynamic variations of trace contaminants in sewage treatment plant (STP) effluents. This strategy will address industrial waste discharge limitations, the impact of internal recycle streams on treatment plant performance and the dynamic response characteristics of treatment plant unit processes to non-steady state loadings of trace contaminants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$60 000

**START/*DÉBUT*:** *1986 10* **END/FIN:** *1987 10*

## 0303-113

Melcer, H
(416) 323-4980

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Stripping of volatile organics during sewage treatment - at full scale sewage treatment plants**

To investigate the significance of air stripping as a means of removing volatile organics during sewage treatment.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$210 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0303-114

Melcer, H
(416) 323-4980

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Stripping of volatile organic contaminants - pilot scale study**

To determine the operational factors affecting the stripping of volatile organics during sewage treatment. Optimize treatment process to minimize the stripping of volatile organics.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$165 000

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1990 08*

## 0303-115

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treating wastewaters from upgrading processes**

Assess appropriate pollution abatement technologies or waste management practices for emissions from the CANMET coal co-processor technology. This project has been terminated.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$1 695 200

**START/*DÉBUT*:** *1983 04* **END/FIN:** *1988 03*

## 0303-116

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Fate of trace contaminants in biological treatment systems**

To determine the manner in which biological wastewater treatment systems dispose of toxic trace contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$412 000

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *1989 04*

## 0303-117

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Biological methods for toxic chemical degradation**

Assess the capability of novel biological reactor systems to remove toxic trace contaminants. This project has been terminated.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Ontario Ministry of Environment

$690 000

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *1988 03*

## 0303-118

Moore, J
Coppock, R
(403) 632-6761

Alberta Environmental Centre

**Studies on toxicity evaluation of industrial wastewaters**

To determine the acute toxicity of bleached kraft pulp mill effluent to fish and mammalian species.

Financing/*Financement:* Alberta Environmental Centre

$230 000

**START/*DÉBUT*:** *1980 04*

## 0303-119

Narasiah, S
(819) 821-7109

Université de Sherbrooke; Département de génie civil

**Performance des étangs aérés en climat froid.**

Etablir les critères de conception des unités d'épuration en fonction des caractéristiques et le climat typique de cette région.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$15 000

## 0303-120

Narasiah, S
(819) 821-7109

Université de Sherbrooke; Département de génie civil

**Traitement des eaux résiduaires provenant des eaux industrielles mixtes**

Trouver une méthode de traitement des déchets (solides + liquides) contenant des résidus toxiques provenant de l'industrie.

Financing/*Financement:* Service central de réservoirs Inc

$22 000

## 0303-121

Narasiah, S
(819) 821-7109

Université de Sherbrooke; Département de génie civil

**Restauration du parc à résidus de la East Sullivan par l'utilisation de résidus organiques**

Offrir une contribution valable à la résolution d'un problème de gestion des boues de la ville de Val d'Or, de gestion de résidus forestiers et de réaménagement de résidus miniers de la région.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$33 100

**START/*DÉBUT*:** *1987 10* **END/*FIN*:** *1988 02*

## 0303-122

Neil, J
(416) 487-8874

Limnos Limited

**Evaluation of Native Marsh Plant Species for Treatment of Domestic Sewage**

1. Review of literature pertaining to the use of alternative marsh species for sewage treatment, the establishment of cells for the comparison of three native species, to develop cultural practice for scale-up and to predict the treatment capability of a fully operating system. 2. To evaluate capacity of duckweed species for removal of ammonia from secondary effluents.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$61 200

**START/*DÉBUT*:** *1985 10* **END/*FIN*:** *1987 03*

## 0303-123

Normandin, Y
(819) 379-8010

Pluritec Assainissement Ltée

**Polissage par osmose inverse de l'effluent de l'usine de traitement de lisier de porc de Saint-Elzéar.**

Vérifier par des essais préliminaires si le procédé d'osmose inverse peut produire pratiquement un effluent de qualité suffisante permettant la réutilisation ou le rejet au cours d'eau, et identifier certaines filières de valorisation des sous-produits.

Financing/*Financement:* Québec, ministère de l'Environnement

$73 091

**START/*DÉBUT*:** *1988 10* **END/*FIN*:** *1989 12*

## 0303-124

Nut, S
(416) 858-2370

Canviro Consultants Ltd.

**Management Strategy for Total Phosphorus in Municipal Sewage Treatment Plant Effluent**

1. Determine factors affecting Total Phosphorus removal 2. Assist Sewage Treatment Plants to improve Total Phosphorus removal 3. Determine best long-term abatement strategy for reducting Total Phosphorus loadings

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$210 000

## 0303-125

Oldham, W
(604) 228-3907

University of British Columbia

**Control of biological nutrient removal efficiency**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0303-126

Oldham, W
(604) 228-3907

University of British Columbia

**Optimization of phosphorus removal and sludge stabilization for domestic sewage**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1985 04*

## 0303-127

Osborne, J
(709) 772-4047

Environment Canada; Conservation & Protection

**Acute and chronic toxicity of discharged oily cutting from exploratory oil well drilling**

Determine potential impact of discharges. Published in Proceedings of Conference on Offshore Waste 88, publisher Elsevier.

Financing/*Financement:* Northern Oil & Gas Action Program

$30 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1986 00*

## 0303-128

Osborne, J
(709) 772-5488

Environment Canada; Conservation & Protection

**Treatment technology for produced water at offshore oil production sites**

Develop new and/or improved technology to treat waste water - reduce oil discharges.

Financing/*Financement:* Panel on Energy Research & Development

$170 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1990 08*

## 0303-129

Paquet, M
(418) 545-5292

Université du Québec à Chicoutimi; Dept. des sciences appliquées

**Développement d'un procédé de traitement anaérobie d'eaux résiduaires de fabriques de pâte thermomécanique.**

Démontrer, à l'échelle du laboratoire, qu'un réacteur à film bactérien fixé sur un support inerte mobile (lit fluidisé) peut être utilisé avantageusement pour traiter de façon anaérobie les eaux résiduaires d'une fabrique de pâte thermomécanique: caractérisation chimique de l'effluent par groupes ou familles de composés en accordant une attention particulière aux substances reconnues pour être toxiques, développement d'un consortium bactérien adapté à cet effluent et capable de dégrader les substances toxiques, détermination des paramètres cinétiques de la biodégradation de l'effluent, développement d'un procédé à l'échelle du laboratoire pour le traitement de cet effluent industriel.

Financing/*Financement:* Université du Québec, Programme de développement académique du réseau

Fondation UQAC

$41 000

## 0303-130

Paquet, M
(418) 545-5292

Université du Québec à Chicoutimi; Dep. des sciences appliquées

**Développement d'un procédé de traitement anaérobie d'eaux résiduaires de fabriques de pâte thermomécanique.**

L'objectif global de ce projet de recherche est de démontrer, à l'échelle laboratoire, qu'un réacteur à film bactérien fixé sur un support interne mobile (lit fluidisé) peut être utilisé avantageusement pour traiter de façon anaérobie les eaux résiduaires d'une fabrique de pâte thermomécanique. Les objectifs spécifiques qui se rapportent aux principales étapes du projet sont les suivants: caractérisation chimique de l'effluent par groupes ou familles de composés en accordant une attention particulière aux substances reconnues pour être toxiques, développement d'un consortium bactérien adapté à cet effluent et capable de dégrader les substances toxiques, détermination des paramètres cinétiques de la biodégradation de l'effluent, développement d'un procédé à l'échelle laboratoire.

Financing/*Financement:* Université du Québec, Programme de développement académique du réseau

$12 000

## 0303-131

Patry, G
(416) 525-9140
Dept. of Civil Engineering; McMaster University

**Modular multi-purpose modelling system for the simulation of wastewater treatment dynamics**

To compile a library of dynamic models for wastewater treatment processes, develop software for simulation and graphical representation of dynamic models, examine applicability of expert systems for improved treatment operations. Interim report: Knowledge-based Systems in Wastewater Engineering, Oct. 1988.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

Lyonnaise des eaux (France)

Société québécoise d'assainissement des eaux

$367 000

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1989 12*

## 0303-132

Peters, R
(514) 375-1991
Agropur, Coopérative agro-alimentaire

**Traitement anaérobie des eaux usées contenant des lipides, glucides et protéines.**

Démonstration sur une échelle industrielle avec deux fermenteurs; un de 410 m3 et un de 560 m3 de granulation des boues en présence des acides gras C16, C18, C20, C22 entre autres.

Financing/*Financement:* Fonds institutionnel de recherche

$2 000 000

**START/*DÉBUT*:** *1984 01* **END/FIN:** *1987 12*

## 0303-133

Peters, R
(514) 375-1991
Agropur, Coopérative agro-alimentaire

**Contrôle des pertes de produits dans l'industrie laitière.**

Contrôle des pertes du lait et de ses dérivés dans un complexe de fromagerie et séchage de lactosérum et de lait écrémé en bas de un (1) pourcent.

Financing/*Financement:* Fonds institutionnel de recherche

$430 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1988 11*

## 0303-134

Peters, R
(514) 375-1991
Agropur, Coopérative agro-alimentaire

**Enlèvement du phosphore dans un réacteur biologique séquentiel**

Rencontrer la norme de 1 mg/litre de phosphore sans dosage d'alun.

Financing/*Financement:* Fonds institutionnel de recherche

$30 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1987 12*

## 0303-135

Picard, G
(418) 656-2710
Université Laval; Dép.des sciences et de la technologie des aliments

**Utilisation de l'azote inorganique par les algues unicellulaires**

Lutter contre la pollution des eaux usées (domestiques-agricoles-industrielles) par un recyclage biologique (production de biomasse) par l'intermédiaire de l'énergie solaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$25 000

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1990 05*

## 0303-136

Pouliot, Y
(418) 692-1357
Bionov CNP Inc

**Traitement et valorisation des eaux usées par culture de microalgues**

Optimisation du procédé en laboratoire et en installation-pilote, sélection de souches de microalgues performantes. Rapport disponible: oui

Financing/*Financement:* Fonds institutionnel de recherche

$15 000

## 0303-137

Powell, G
(416) 485-7715
Gore & Storrie Limited

**Demonstration of the Phoredox Process at Lakeview WPCP**

To evaluate the effect of the introduction of the Phoredox process on overall plant performance.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$25 000

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1988 01*

## 0303-138

Prévost, M
(514) 384-1260
Gendron Lefèbvre

**Etude du pressoir rotatif à sabot: déshydratation des boues à une usine municipale d'épuration des eaux.**

Préciser les conditions optimales de conception et de fonctionnement du pressoir; déterminer les paramètres d'opération avant de procéder aux essais: la pression d'alimentation, la pression de sortie et la vitesse de rotation; mesurer les taux de production optimun pour différentes concentra-

tions de boues brutes et de siccité de gâteau; démontrer le potentiel technique du pressoir. Rapport disponble.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Québec, ministère des Approvisionnements et Services

$120 000 **END/*FIN*:** *1987 04*

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## 0303-139

Prévost, M
(418) 423-4241

Les Industries Fournier Inc.

**Essais-pilotes du pressoir rotatif à la station d'épuration de la C. U.M.**

Estimer les performances du pressoir sur des boues de précipitation physico-chimique au chlorure ferrique et polymère, avec et sans écume; les critères à surveiller: la consommation de polymères, le taux de production pour des siccités de 34 à 35% M.S., les taux de capture des matières solides et la consommation énergétique. Vérifier la stabilité des performances. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Centre de recherche industriel du Québec

$158 054

**START/*DÉBUT*:** *1988 08* **END/*FIN*:** *1989 07*

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## 0303-140

Prevost, M
(418) 423-4241

Les Industries Fournier Inc

**Etude de faisabilité de déshydratation des boues d'abattage de volailles par le pressoir rotatif à sabot.**

Déterminer l'applicabilité du pressoir rotatif à sabot pour la déshydratation des boues d'abattoirs de dinde mâle, de reproduction et de poule pondeuse. Déterminer les critères de désign et en vérifier les performances sur une base continue. Optimiser le conditionnement des boues et vérifier le colmatage des tamis.

Financing/*Financement:* Québec, ministère de l'Environnement

Les Industries Fournier Inc

Association des abattoirs avicoles du Québec

$33 100

**START/*DÉBUT*:** *1988 01* **END/*FIN*:** *1988 03*

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## 0303-141

Prevost, M
(514) 384-1260

Gendron lefèbvre

**Etude de pré-faisabilité de déshydratation des boues d'abattoir de volailles par le pressoir rotatif à sabot.**

Effectuer les essais préliminaires en vue de déterminer les critères de désign d'un pressoir rotatif à sabot pour cette application particulière. Les résultats ayant été positifs des essais additionnels de faisabilité ont été recommandés.

Financing/*Financement:* Québec, ministère de l'Environnement

Association des abattoirs avicoles du Québec

Canada, ministère de l'Environnnment

$10 000

**START/*DÉBUT*:** *1986 12* **END/*FIN*:** *1987 04*

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## 0303-142

Racz, G
(204) 474-6036

University of Manitoba

**Monitor soil characteristics of pasture and cropland used for fertigation**

To monitor the effect of fertilizer plant effluent on soils used for fertigation, and to ensure compliance with the Clean Environment Commission Order. Reports filed annually with the Manitoba Environmental Management Division.

Financing/*Financement:* Simplot Chemical Company Ltd.

$10 000

**START/*DÉBUT*:** *1974*

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## 0303-143

Redpath, A
(416) 499-3060

Ecoplastics Ltd.

**Retractable absorbents for environmental clean-up**

Samples of the absorbent and working models of a highly innovative underwater retrieval mechanism have been extensively evaluated on pilot scale, in a test chamber simulating a contaminated river site. The objective of this study is to confirm and quantify the performance of both the absorbent and the delivery system of choice under actual field conditions.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$97 300

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1990 06*

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## 0303-144

Robitaille, L
(418) 871-3469

Lapel; Groupe-Conseil inc

**Simulation d'un système intégré de gestion du transport du lisier de porc**

Définir les exigences (fournisseurs, utilisateurs, contraintes) d'un système de gestion du transport du lisier de porc. Effectuer des simulations d'une saison de transport selon différents scénarios. Evaluer ses chances de succès et sa pertinence en tant que solution aux problèmes des surplus de lisier de porc.

Financing/*Financement:* Québec, ministère de l'Environnement

$35 598

**START/*DÉBUT*:** *1988 07* **END/*FIN*:** *1989 03*

## 0303-145

Rollin, A
(514) 340-4922
Chemical Engineering; Ecole Polytechnique

**Développement d'un nouveau système de fosse septique incorporant des géosynthétiques**

A incorporer des géotextiles et des géodrains à la fois au niveau d'un noveau type de bioréacteur anaérobic et dans le champ d'épuration des effluents.

Financing/*Financement:* Environment Canada, Conservation and Protection

Societe québécoise d'assainissement des eaux

Hydro Québec

Texel Inc.

Les Réservoirs Granby Inc.

$297 000

**START/*DÉBUT***: *1988 12* **END/*FIN***: *1991 12*

## 0303-146

Rollin, A
(514) 340-4922
Chemical Engineering; Ecole Polytechnique

**Study of the relationship between biofilm development and geotextile structures**

To study biofilm development on synthetic textiles (geotextiles) leading to the design of proper cloth media in the treatment and disposal of domestic wastewater onsite. Final report unpublished (precompetitive research protected), 'Study of the Relationship Between Biofilm Development and Geotextile Structures', A. Rollin and H. Brisson, Chemical Engineering Dept., Ecole Polytechnique de Montréal.

Financing/*Financement:* Environment Canada, Conservation & Protection

$23 635

**START/*DÉBUT***: *1988 01* **END/*FIN***: *1988 10*

## 0303-147

Rollin, A
Bolduc, G
(514) 340-4720
Ecole polytechnique de Montréal; Centre de développement technologique

**Développement d'un nouveau système de fosse septique incorporant un bioréacteur et des géosynthétiques.**

Incorporer des géosynthétiques à la fois au niveau d'un nouveau type de bioréacteur et au niveau d'un nouveau système anaérobie de drainage de l'effluent: étudier les relations entre le développement du biofilm et les structures des géotextiles, étudier le développement du biofilm dans un réacteur anaérobie employant des géotextiles, caractériser et sélectionner un effluent de réservoir septique, faire une démonstration en chantier.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$307 135

**START/*DÉBUT***: *1989 11* **END/*FIN***: *1992 11*

## 0303-148

Rosenfeld, J
(416) 525-9140
McMaster University

**Solid supported reactions: the chemical basis for development of automation**

Optimize techniques to separate chlorophenoxy acetic acid PFB-esters from those of background carboxylic acids. Determine the largest volume for simultaneous extraction/derivatizations from water. Establish procedures for determination at the 100 pg/ml concentrations. Evaluate reproducibility of detection limits and linearity of response with concentrations. Validate results.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$40 000

**START/*DÉBUT***: *1989 05* **END/*FIN***: *1990 04*

## 0303-149

Sala, J
(514) 848-8000
Société d'électrolyse et de chimie Alcan Ltée

**Traitement du lixiviat de la brasque.**

Décomposition des cyanures en solution. Traitement du fluorure en solution.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$300 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1988*

## 0303-150

Schmidt, J
(416) 336-4541
Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Investigation of cyanide destruction**

To investigate mechanisms and effectiveness of cyanide destruction techniques at Gold Mills in Northern Ontario.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0303-151

Schmidt, J
Booth, R
(416) 336-4541
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of leachate/contaminated groundwaters from landfills and industrial sites**

To assess existing treatment technologies and develop and demonstrate technically feasible, cost-effective technologies for the treatment of leachate or contaminated groundwater from landfills. To provide technical support and tech-

nical advice. Interim publications available from project investigators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Toxics Program Funding

$2 257 000

**START/*DÉBUT*:** *1983* **END/FIN:** *ongoing*

## 0303-152

Schmidt, J
Zaidi, A
(416) 336-4541

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of aqueous effluents from in situ bitumen/heavy oil recovery operations**

To develop and demonstrate cost-effective technologies for the treatment of wastewaters from bitumen/heavy oil operations. Technologies will be such as to permit the recycling of wastewaters, or surface water discharge. Interim reports available from the project investigator.

Financing/*Financement:* Panel on Energy Research and Development

Department of Supply and Services Canada

Alberta Oil Sands Technology & Research Authority

Environment Canada, Conservation and Protection

Industry

$5 581 200

**START/*DÉBUT*:** *1982* **END/FIN:** *1992 03*

## 0303-153

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evaluation of Canadian and American procedures used in the assessment of complex wastewaters**

To evaluate the sensitivity and reliability of the individual testing procedures using reference toxicant mixtures and treated final wastewaters from a variety of industrial sources. To demonstrate the usefulness of short-term cost-effective acute and chronic toxicity testing procedures to compare with and complement the chemical characterization approach.

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation & Protection

Ontario Ministry of Environment

$306 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1990 03*

## 0303-154

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Aquatic toxicity impact studies relevant to Ontario sewage treatment plant effluent discharges**

To collect and review relevant municipal STP effluent toxicity and receiving water impact information and studies to help focus the efforts of the Ontario STP effluent toxicity field characterization program. Report has been published by Ontario MOE as a MISA publication.

Financing/*Financement:* Ontario Ministry of Environment

$40 000

**START/*DÉBUT*:** *1987 02* **END/FIN:** *1988 02*

## 0303-155

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Traitement tertiaire des eaux usées par microalgues.**

Enlèvement des éléments nutritifs (N.P.) des effluents secondaires par biotechnologie solaire. Enlèvement de l'azote par strippage avec biocontrôle du PH par des microalgues. Production de biomasse d'algues.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$300 000

**START/*DÉBUT*:** *1980*

## 0303-156

Sérodes, J
de la Noüe, J
(418) 656-2868

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Valorisation et traitement d'effluents par biotechnologie solaire**

Mettre au point des systèmes de traitement tertiaire par recyclage biologique. Accroître nos connaissances en biotechnologie solaire, en particulier sur la physiologie des microalgues; concevoir, réaliser, opérer et optimiser des systèmes biotechnologiques solaires (culture de chlorophycées et de cyanobactéries pour l'épuration d'effluents polluants; évaluer l'intérêt des biomasses produites pour fins d'alimentation animale ou d'extraction de produits spécifiques.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$100 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1990 05*

## 0303-157

Sérodes, J-B
(418) 656-2868

Université Laval; Département de génie civil

**Mise au point d'un système expert pour l'exploitation des usines de traitement des eaux usées.**

Développer des systèmes experts lesquels sont des outils informatiques pouvant mémoriser les données expérimentales d'exploitation des usines et pouvant mettre à jour des modèles préalablement développés, ce, afin d'accélérer la

prise de décisions d'exploitation optimale; développer des prologiciels pouvant être utilisés par du personnel non qualifié et avec un équipement informatique simple.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$40 000

**START/*DÉBUT*:** *1988 12* **END/FIN:** *1990 12*

## 0303-158

Seyfried, P
(416) 978-2760

Department of Microbiology; Faculty of Medicine; University of Toronto

**Identification of the Presence of Sanitary Waste in Storm Sewers by Fecal Indicator Bacterial Flora**

1. To determine the concentrations of fecal indicator bacteria in storm water and storm sewers at selected Toronto locations. 2. To identify the species present in the above bacterial population. 3. To conduct the above analysis on sanitary sewers serving the same areas. 4. To develop a method to determine the presence of sanitary waste in storm sewers. 5. To apply the above procedure to the tracing of illegal sanitary connections to priority storm sewers in the Metro Toronto Area.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$176 800

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1989 07*

## 0303-159

Sherbin, G
(416) 973-1098

Environment Canada; Environmental Protection

**Federal AOX survey of Ontario kraft mill effluents**

To provide baseline data for the concentration of adsorbable organically-bound halogen (AOX) in the final effluents from Ontario kraft mills. This data will be used to develop MISA regulations.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT*:** *1988 07* **END/FIN:** *1989 07*

## 0303-160

Sherbin, G
(416) 973-1098

Environment Canada; Environmental Protection

**Anaerobic treatment for BOD and toxicity reduction in pulp and paper wastewaters**

To provide data on the best available technology economically achievable for the pulp and paper sector, which will be used in the development of the effluents limits regulation.

Financing/*Financement:* Ontario Ministry of Environment

$733 000

**START/*DÉBUT*:** *1987 00* **END/FIN:** *1990 00*

## 0303-161

Siebert, H
Masters, I
(403) 998-6339

Environmental Services; Sherritt Gordon Ltd.

**Storm water treatment by ammonia stripping**

Primary - to reduce NH3-N levels. Secondary - to remove base metals. Report will not be available to general public.

Financing/*Financement:* Sherritt Gordon Mines Ltd.

## 0303-162

Siebert, H
Masters, I
(403) 998-6339

Environmental Services; Sherritt Gordon Ltd.

**Ion exchange treatment of storm pondwater**

Primary - to reduce NH3-N levels. Secondary - To remove base metals. Report will not be available to general public.

Financing/*Financement:* Sherritt Gordon Mines Ltd.

## 0303-163

Smith, D
(403) 432-4138

University of Alberta; Department of Civil Engineering

**Water disinfection with ozone**

Three components: 1. Study of clear water destruction of microorganisms. 2. Study of the kinetics of competing reactions. 3. Development of improved contactor design.

Financing/*Financement:* Natural Sciences and Engineering Research Council

**START/*DÉBUT*:** *1988 04*

## 0303-164

Smoragiewicz, W
Dubeau, H
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Développement d'un procédé visant à améliorer la gestion des boues résiduaires des stations d'épuration des eaux usées.**

L'objectif général de ce projet de recherche est de diminuer la charge organique des boues résiduaires des stations d'épuration des eaux usées tout en augmentant la quantité de biogaz produite par fermentation méthanogénique, et ce faisant appel à la biotechnologie.

Financing/*Financement:* Fonds institutionnel de recherche

$15 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988*

## 0303-165

Speirs, G
(416) 336-4745

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Energy savings in automated full scale activated sludge systems**

To demonstrate energy savings and improved control through the incorporation of automated process control. Report available in 1988.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Regional Municipality of Waterloo

$1 089 000

**START/*DÉBUT***: *1982 00* ***END/FIN***: *1988 03*

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## 0303-166

Speirs, G
(416) 336-4745

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Wastewater treatment plant automatic process control**

To improve operational control at wastewater treatment plants. Project reports for Phase 1 available 1983, SCAT-12; Storm Flow Control available 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1982 00* ***END/FIN***: *1988 03*

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## 0303-167

St-Arnaud, S
(514) 689-4117

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Etude de certains aspects microbiologiques de la nitrosation du lisier de porc**

La forte teneur en azote du lisier de porc est une des principales causes de la pollution engendrée par ce déchet. Il est connu que la nitrification biologique suivie d'une dénitrification est une façon intéressante pour éliminer ou réduire les composés azotés. Afin d'optimiser un traitement biologique nous avons cherché à mieux connaître les nitrobactéries et leur comportement sous les conditions difficiles rencontrées avec le lisier de porc. Nous avons premièrement tenté d'isoler en culture pure les nitrobactéries du lisier de porc. Nous avons complété la première étape d'une étude portant sur l'utilisation d'un appareil à biodisques pour transformer le NH4+ en NO2-. Nous avons déterminé le comportement de Nitrosomonas europea en anaérobiose et de l'oxydation de la matière organique.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$7 500

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## 0303-168

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Research into the use of filtration for tar-sands tailings pond water treatment, for purposes of recycling**

(as above) Final report April 1989.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

Syncrude Canada Ltd.

$146 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

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## 0303-169

Tremblay, B
Bourque, C
(819) 727-9431

Groupe LMB Experts-Conseils inc.

**Efficacité de traitement du filtre à sable classique pour assainir les eaux usées des résidences isolées en Abitibi.**

Evaluer l'efficacité de traitement des eaux usées de trois filtres à sable classiques des résidences isolées dans trois municipalités de la M. R.C. de l'Abitibi; la capacité de traitement sera évaluée en relation avec le débit (consommation réelle de l'eau dans la maison) et en terme de qualité de l'émissaire (M.E.S., DBO5, coliformes fécaux, etc.).

Financing/*Financement:* Québec, ministère de l'Environnement

$45 000

**START/*DÉBUT***: *1989* ***END/FIN***: *1990 07*

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## 0303-170

Vachon, D
(416) 336-4558

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Treatment of metal finishing effluents**

Develop and demonstrate innovative, technically feasible and cost effective options for the treatment of effluents from the metal finishing industry. Specifically in 1988 and 1989 the use of 'total residual chlorine' for process control of the alkaline chlorination process (2 stage CN oxidation) will be evaluated and an appropriate control package developed.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$300 000

**START/*DÉBUT***: *1988 08* ***END/FIN***: *1990 04*

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## 0303-171

Vachon, D
(416) 336-4558

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Placer mining effluent treatment demonstration project**

To demonstrate chemical coagulation technology for the treatment of placer mining wastewater at full-scale in the field to meet defined effluent suspended solids objectives.

Final report available from project investigator. Project completed, no further work planned.

Financing/*Financement:* Department of Supply and Services Canada

Indian and Northern Affairs Canada

Environment Canada, Conservation and Protection

$246 000

**START/*DÉBUT:*** *1982* **END/FIN:** *1986*

## 0303-172

Vachon, D
(416) 336-4558

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of woodroom and paper making effluents, pulp and paper industry**

To provide technical assistance to HQ and Regional personnel concerned with pulp and paper wastewater treatment systems. Project is complete. Final report available in 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

$85 000

**START/*DÉBUT:*** *1982* **END/FIN:** *1986*

## 0303-173

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Méthodologie d'évaluation de l'évolution de la qualité de l'eau du fleuve St-Laurent**

Dèveloppement d'un logiciel pour l'analyse des tendances temporelles d'èvolution des parametres de qualité.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$111 000

**START/*DÉBUT:*** *1986 08* **END/FIN:** *1989 04*

## 0303-174

Villeneuve, R
n. disponible

Les Consultants RSA

**Système expert pour l'aide à l'opération d'usines de traitement des eaux usées à boues activées.**

Créer un système pour aider les opérateurs à analyser et interpréter les résultats d'opération des usines afin de comprendre les causes des problèmes et d'appliquer les solutions adéquates. Le système vise la facilité d'utilisation, de faibles investissements, l'adaptabilité aux différentes usines de ce type au Québec, une mise à jour des connaissances nouvelles.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

$96 000

**START/*DÉBUT:*** *1989* **END/FIN:** *1990 04*

## 0303-175

Viraraghavan, T
(306) 584-4709

University of Regina

**Anaerobic filter treatment of septic tank effluent at low temperatures**

To evaluate the performance of anaerobic septic tank effluent treatment filters operating at 5oC, 10oC and 20oC during startup and subsequently at various hydraulic retention times (HRT) to examine the applicability of the process to Canadian climatic conditions. Final report unpublished by CMHC, 'Anaerobic Filter Treatment of Septic Tank Effluent at Low Temperatures', T. Viraraghaven and K. Dickenson, Faculty of Engineering, University of Regina, Regina, Saskatchewan, March 1988.

Financing/*Financement:* Canadian Mortgage & Housing Corporation

$25 999

**START/*DÉBUT:*** *1986 04* **END/FIN:** *1988 03*

## 0303-176

Webber, M
(416) 336-4519

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Land application of sewage sludge**

To maximize technology transfer in the field of municipal sludge utilization. Papers are available from M. Webber.

Financing/*Financement:* Environment Canada, Conservation and Protection

$155 000

**START/*DÉBUT:*** *1975* **END/FIN:** *ongoing*

## 0303-177

Whitby, G
not available

Trojan Technologies Inc.

**Full Scale Study of the Effect of Wastewater Variable on the Efficiency of Ultraviolet Disinfection**

To create a better understanding of UV disinfection process at full scale level by: a) reduction of UV transmission of effluent, b) reduction of effluent quality primary & secondary solids, c) determination of photoreactivation and dark reactivity in situ, d) determination of efficiency of disinfection at mid-point & end-point of lamp life, e) determination of correlation between bacteriophage & E. coli; f) lamp output versus sensor response, g) mathematical modelling versus measured parameters.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$73 700

**START/*DÉBUT:*** *1985 07* **END/FIN:** *1986 07*

## 0303-178

Zaidi, A
(416) 336-4618

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Technologies for the recovery of specific contaminants and recycle of industrial effluents**

To ensure the availability of appropriate technology for recovering specific contaminants of concern from industrial effluents with emphasis on the recycle of treated effluents as process water. In 1987-88, the emphasis will be on organic chemicals, food processing and printed circuit board manufacturing industries. Interim reports available from project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Department of Supply & Services Canada

$360 000

**START/*DÉBUT***: *1980* ***END/FIN***: *ongoing*

## 0303-179

Zaidi, A
Simovic, L
(416) 336-4618

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Gold mining effluent treatment**

To continue to collect and disseminate information on alternative technologies to treat gold mining effluents as well as undertake appropriate R&D to ensure that technically and cost-effective technologies are demonstrated for the treatment of gold mining effluents. To provide technical advice and assistance. Reports are available from the project investigator. Two seminars were held in FY 1988-89.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Department of Energy, Mines and Resources Canada

Ontario Ministry of Environment, Municipal Industrial Strategy Abatement

$734 000

**START/*DÉBUT***: *1980* ***END/FIN***: *ongoing*

## 0303-180

Zaloum, R
(514) 283-4252

Centre Saint-Laurent; Environnement Canada

**Le traitement des effluents d'une usine de pâtes et papier (TMP) par filtre biologique aéré**

Investigate whether aerated biofiltration is applicable to treatment of TMP pulp and paper effluents.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

MENVIQ

Kruger Paper Company

John Muenier Inc.

$497 000

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1990 04*

## 0303-181

Zaloum, R
(514) 283-4252

Centre Saint-Laurent; Environnement Canada

**Etude du pressoir rotatif à sallot**

Evaluer l'applicabilité de cette technologie pour la déhydratation de divers types de boues résiduaires (urbaines et agricoles).

Financing/*Financement:* Ministère d'Approvisionnements et Services Canada

Environment Canada, Conservation & Protection

Ministère de l'Environnement du Quebec

$192 154

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1987 04*

## 0303-182

Zaloum, R
(514) 283-4252

Centre Saint-Laurent; Environnement Canada

**Ensemencement des haldes minières à l'aide de boues d'épuration**

Le but du projet est de déterminer les conditions de revégétation des haldes de résidues miniers d'amiante à l'aide des boues d'épuration de l'usine de la haute-Bécancour.

Financing/*Financement:* Ministère d'Approvisionnements et Services Canada

Energy Mines & Resources Canada

Environnement Canada, Conservation et Protection

Energie, Mines et Ressources Québec

$227 000

**START/*DÉBUT***: *1987 08* ***END/FIN***: *1989 03*

## 0303-183

Zukovs, G
(416) 858-2320

Canviro Consultants Ltd.

**Monitoring of Toxics Contaminants in 40 Sewage Treatment Plants**

To collect the necessary data for the development of MISA - municipal STP monitoring and compliance regulations.

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$440 000

**START/*DÉBUT***: *1987 01*

## 0304-1

Baddaloo, E
(403) 427-3943
Alberta Environment

**Control of irrigation return flows in Southern Alberta**

To study the sensitivity of irrigation return flow rates to several irrigation canal design and operation parameters. A model was used to investigate factors such as: shape, slope, condition, design capacity of canals, number of depth control structures, seepage rates, flow rates, operation and type of control structures and number of delivery points.

Financing/*Financement:* Alberta Environment

$32 000

**START/*DÉBUT*:** *1984* **END/*FIN*:** *1986 10*

## 0304-2

Baddaloo, E
(403) 427-3943
Alberta Environment

**Aquatic plant biological control (Elecocharis acicularis)**

To investigate the use of Spike rush of Eleocharis acicularis to displace plants which reduce the flow of water, plug sprinkler systems, and in some cases flood farmlands. (Report available: Alberta Environment. Report No. RMD 87/40).

Financing/*Financement:* Alberta Environment

$21 800

**START/*DÉBUT*:** *1985 09* **END/*FIN*:** *1987 03*

## 0304-3

Blakeman, W
(819) 953-1105
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental protection criteria - coal mining preparation (PERD project 24201)**

To identify sources of wastes, identify and quantify contaminants and identify and assess in place and potentially emerging pollution abatement technologies at Canadian coal mining and preparation facilities, with respect to liquid effluents, particulate and gaseous air emissions and the management of solid wastes.

Financing/*Financement:* Panel on Energy Research and Development
Environment Canada, Conservation and Protection

$792 500

**START/*DÉBUT*:** *1982 04* **END/*FIN*:** *1990 03*

## 0304-4

Brownlee, B
(416) 336-4706
Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in rivers**

Research on improved methods of measuring and modelling transport of contaminants on suspended particulate matter in rivers. The emphasis will be on oil sands related contaminants (PAHs and related compounds) in the Athabasca River.

Financing/*Financement:* Environment Canada, Conservation and Protection

$700 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1994 03*

## 0304-5

Cluis, D
(418) 654-2535
Université du Québec; INRS-eau

**Couplage quantité-qualité du modèle hydrologique conceptuel CEQUEAU**

Etablir la relation entre l'utilisation du territoire et la qualité de l'eau des rivières qui le drainent. Le but est de juger l'efficacité relative des interventions agricoles, municipales et industrielles sur la qualité du milieu récepteur. Modèle opérationnel sur micro IBM-PC.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$32 000

**START/*DÉBUT*:** *1986* **END/*FIN*:** *1988*

## 0304-6

Felix, N
(416) 675-5950
Giffels Associates Limited

**Water Use in Kraft Mills**

To investigate and report on how water is used in Ontario's Kraft Mills, the potential for further reduction of water usage and its impact on the quality of the effluent.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$34 200

**START/*DÉBUT*:** *1986 06*

## 0304-7

Haslam, A
Smith, L
(416) 485-7715

Gore & Storrie Limited

**Assessment of the Influence of Various Factors on Water Use Across Ontario - Stage I**

To obtain a better understanding of the wide diversity in water consumption by various communities across the province so that future planning can be more effective.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 000

**START/*DÉBUT***: *1987 01*

## 0304-8

Johnson, R
(403) 632-6761

Alberta Environmental Centre

**Water use and salt transport on agricultural land**

To identify a cropping system that uses sufficient soil moisture available from precipitation to prevent seepage to groundwater and salinity accumulation and to explore the use of plants to lower groundwater tables. Progress reports are available.

Financing/*Financement:* Alberta Environmental Centre

Alberta Environment

$300 000

**START/*DÉBUT***: *1985 05*

## 0304-9

Kreutzwiser, R
(519) 824-4120

Department of Geography; University of Guelph

**Perception and Use of Water Demand Management Strategies in Ontario Municipalities**

To assess the committment of Ontario municipalities to water conservation, identify factors affecting conservation practice and provide recommendations to encourage municipal water conservation.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$8 500

**START/*DÉBUT***: *1986 09*

## 0304-10

Marsalek, J
(416) 336-4899

Rivers Research Branch; National Water Research Institute; Environment Canada

**Nonpoint sources of pollution**

Develop and refine tools for characterization and quantification of nonpoint source pollution in rural and urban areas.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1998 03*

## 0304-11

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Small lake restoration**

Evaluate oxygen injection, lime treatment, and sediment dredging as lake restoration tools.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$300 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0304-12

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Pesticide transport by spring run-off**

To determine quality and quantity of surface run-off into 20 farm dugouts on 4 different soil types in Sask. To determine the potential movement of herbicides under zero till in agronomic practices in Manitoba.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0304-13

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Herbicide and nutrient loss using low-pressure irrigation systems**

Under conditions of low-pressure irrigation, determine the mobility and degradation of herbicides, pesticides and nutrients; the quantity and quality of leachate; and the degradation and leaching characteristics of herbicides, pesticides and nutrients.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0304-14

Painter, D
(416) 336-4789

Lakes Research Branch; National Water Research Institute; Environment Canada

**Macrophyte abundance in Great Lakes**

In several AOCs, aquatic plants affect the attainment of beneficial uses. Remedial options under discussion would increase aquatic plant abundance thereby affecting recreational boating negatively but positively affecting fish habitat.

Information will be obtained, gaps identified to assist the RAP.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$355 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0304-15

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Factors controlling aquatic weeds in prairie lakes and rivers**

To evaluate effects of nitrogen, and phosphorus concentrations and current speed on macrophyte growth in rivers. Reports prepared for: Recreation, Parks and Wildlife. January 1987, the University March 1988, Environment Canada December 1987, Donner Foundation January 1989; two papers published in primary literature, three submitted to primary literature.

Financing/*Financement:* Recreation Parks and Wildlife Foundation (Alberta)

University of Alberta

Environment Canada, Conservation & Protection

Alberta Environment

Donner Canadian Foundation

$214 800

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1991 03*

## 0304-16

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Use of lime to control algal growth and rooted plants in farm dugouts**

Reduce algal biomass with non toxic substance. Report prepared April 1988 and April 1989. Project will run until March 1991. Reporting will include student's thesis and papers in the primary literature. One manuscript has been accepted in primary literature.

Financing/*Financement:* Alberta Agriculture

Boreal Institute for Northern Studies

Environment Canada, Conservation & Protection

Farming for the Future, Alberta Agriculture

$122 700

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1991 04*

## 0304-17

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Sediments as a phosphorus and nitrogen source in deep prairie lakes**

To produce an approach to estimate the impact of sediment-released nutrients on water quality in prairie lakes. Interim reports prepared in 1984, 85, and 86, final report prepared in 1987, three publications accepted in primary literature, two MS submitted, plus students Ph.D. Thesis accepted March 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Boreal Institute for Northern Studies

$50 584

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 10*

## 0304-18

Ricketts, P
(902) 420-5740

St. Mary's University

**Resource & environmental data base & information mapping & atlas for Gulf of Maine, marine region**

Prepare an electronic and atlas format database of existing information on the marine features and resources of the Gulf of Maine, Bay of Fundy and Georges Bank areas.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

Council of Maritime Premiers

Nova Scotia Department of Fisheries

$222 000

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1990 03*

## 0304-19

Robinson, J
(519) 885-1211

University of Waterloo

**Modelling municipal water systems for demand management**

It is proposed to develop a computer model that will enable policies for water demand management to be evaluated. Such policies will include economic incentive policy instruments such as water rate structure, water rate level and wastewater surcharges. The model will be designed so that comparisons can be made between the cost effectiveness of demand management approaches to the supply management approach. The model will be useful for forecasting water prices, timing of supply system expansions, etc.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$52 600

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1991 08*

## 0304-20

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Utilisation de l'eau des lacs de boues rouges aux épurateurs des salles de cuves.**

Utiliser l'eau des lacs comme liqueur de neutralisation dans le procédé d'épuration humide des gaz des salles de cuves. But: améliorer la gestion des lacs de boues rouges en augmentant l'évaporation de l'eau et en diminuant le besoin de rehausser les digues des bassins de sédimentation (lac des

boues rouges). Nous devons vérifier si l'eau des lacs affecte le procédé d'épuration.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$400 000

**START/*DÉBUT*:** *1988 01* **END/*FIN*:** *1988 12*

## 0304-21

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Field sampling to monitor impacts resulting from in-situ heavy oil subsurface disposal practices**

To develop and estimate costs associated with the geologic, hydrogeologic and hydrogeochemical sampling and testing component of a field program to monitor the potential impact of waste fluid injection in the vicinity of Cold Lake, Alberta. Report copies are still available.

Financing/*Financement:* Panel on Energy Research & Development

$45 000

**START/*DÉBUT*:** *1986 01* **END/*FIN*:** *1987 06*

## 0304-22

Tsang, G
(416) 336-4622

Rivers Research Branch; National Water Research Institute; Environment Canada

**River environmental and ice studies**

To better understand the physical characteristics of bubble plumes and their biological affects when used in an aquatic environment. To develop a basic understanding of the early formation and properties of river ice (frazil and anchor ice) and its bio-chemical effects. To investigate the bio-chemical degradation of toxic substances in rivers for better river environmental management.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Hydro

$200 000

**START/*DÉBUT*:** *1988 07* **END/*FIN*:** *1991 01*

## 0304-23

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Treatment of fish hatchery supply waters for the removal of IPN virus**

To demonstrate the successful disinfection of IPN containing water. To obtain the necessary facility in one of Alberta's hatcheries.

Financing/*Financement:* Alberta Public Works Supply & Services

Alberta Environmental Centre

**START/*DÉBUT*:** *1989 04*

## 0304-24

Whitney, J
(416) 978-4977

University of Toronto

**GIS for soil erosion in northern China**

A GIS management approach to control soil erosion.

Financing/*Financement:* Canadian International Development Agency

$510 000

**START/*DÉBUT*:** *1988 05* **END/*FIN*:** *1991 04*

## 0304-25

Wishart, D
(403) 420-5210

Interprovincial Pipe Line (NW) Ltd.

**Aquatic monitoring studies of the Norman Wells to Zama Pipeline**

To determine if pipeline construction or operation were contributing to degradation of aquatic habitats or water quality along the pipeline route. Interim and final reports are available for viewing from Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$250 000

**START/*DÉBUT*:** *1984 01*

## 0305-1

Averill, D
(416) 336-4747

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Process control and upgrading of effluent filtration**

To develop process control and monitoring strategies for granular media filters employed in either municipal or industrial wastewater treatment processes and to develop a better understanding of filter design and operation procedures. To optimize granular media filter systems for specific wastewater applications. Interim reports available from the project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection

$383 000

**START/*DÉBUT***: *1981* ***END/FIN***: *ongoing*

## 0305-2

Badakhshan, A
Irvine, G
(403) 220-4799

University of Calgary; Chemical & Petroleum Engineering Dept.

**Pilot plant studies on drinking water treatment by ozonation**

To find the effect of ozonation in place of chlorination on the formation of tritratromethanes in the course of treatment of the City of Calgary dinking water.

Financing/*Financement:* Alberta Environment

University of Calgary

City of Calgary Water Works

$100 000

**START/*DÉBUT***: *1983 07* ***END/FIN***: *1986 06*

## 0305-3

Benedek, A
(416) 639-6320

Zenon Environmental Inc.

**Development of an optimum system for the application and regeneration of powdered activated carbon in water treatment plants**

To develop process design criteria for application of powdered activated carbon (PAC) in drinking water treatment for the removal of toxic organic contaminants. To develop a conceptual plan for Southwestern Ontario water plants for the application and assess the potential of regeneration PAC in an environmentally acceptable and convenient mode of operation.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$370 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0305-4

Béron, P
n. disponible

Université du Québec à Montréal; Département de chimie

**Mise au point de nouvelles techniques de désinfection de l'eau en vue de remplacer le chlore par l'utilisation de l 'ozone et des rayons ultraviolets.**

Développer de nouvelles techniques de désinfection ayant les qualités suivantes: être fiables et d'une efficacité constante, être d'application facile dans des usines réelles, devant détruire les bactéries aussi bien que les virus, ne devant pas être très coûteuses.

Financing/*Financement:* Société québécoise d'assainissement des eaux

$40 000

**START/*DÉBUT***: *1988 12* ***END/FIN***: *1990 12*

## 0305-5

Boomer, D
(416) 235-5858

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**ICP/MS Development of Method for Analysis of Drinking Water For Elements**

To develop a sensitive accurate method for the direct analysis of drinking water for elemental composition.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$84 000

**START/*DÉBUT***: *1986 05*

## 0305-6

Brown, D
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Pesticide levels in agricultural watersheds in Manitoba - (Stephenfield Reservoir)**

To identify concentrations and determine use impacts of agricultural pesticides in Manitoba watersheds. The monitoring and evaluation is ongoing and is being carried out in

consultation with several provincial government and federal government agencies.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Environment Canada, Conservation and Protection

Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT*:** *1987* **END/FIN:** *1989 00*

## 0305-7

Cheam, V
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Development of liquid chromatography (LC) methodology for analysis of environment samples**

To develop an ion chromatographic method for determination of organic acids. Investigate application of LC for pulp and paper effluents analysis.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *ongoing*

## 0305-8

Clement, R
(416) 235-5896

Ontario Ministry of Environment; Lab Services Branch

**Validation studies of automated preconcentration water sampler (APS) for dioxin/furans**

To validate the use of the APS for sampling parts-per-quadrilion levels of dioxins/furans in drinking water.

Financing/*Financement:* Ontario Ministry of Environment

$20 000

**START/*DÉBUT*:** *1989 06* **END/FIN:** *1989 09*

## 0305-9

Coburn, J
(416) 825-1492

Zenon Environmental Inc.

**Standard reference materials for trace organic analysis of aqueous environmental samples**

To conduct a comprehensive critical literature review of the preparation of standard aqueous solutions of highly hydrophobic materials, such as dioxins, organochlorine pesticides and polychlorinated biphenyls. Submit a copy of this review to the Drinking Water Organics Section. To prepare a number of generator columns for these hydrophobics, calibrate them and deliver these columns with appropriate certificates to the Drinking Water Organics Section.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$28 000

**START/*DÉBUT*:** *1989 07* **END/FIN:** *1991 06*

## 0305-10

Craig, B
(613) 225-2447

Paracel Laboratories Ltd.

**Solid phase extraction of PAH's from drinking water and analysis of chlorophenols and phenoxy-acid herbicides in water**

To determine the feasibility of using Solid Phase Extraction (SPE) in the analysis of polynuclear aromatic hydrocarbons (PAH's) in water. To complete the work conducted previously as a feasibility study on the solid phase extraction of chlorophenols and phenoxy-acids so that this methodology may be adopted as a routine procedure by the Ministry and to improve the derivatization and clean-up procedures for these compounds.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$100 000

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

## 0305-11

Crozier, P
(416) 235-5911

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Development of High Performance Liquid Chromatograph Method for Analysis of PAH's in Drinking Waters**

To develop and automate a HPLC method for the analysis of PAH's in drinking waters.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT*:** *1987 03*

## 0305-12

Crozier, P
(416) 235-5911

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Feasibility Study for the Analysis of Toxaphene in Drinking Waters**

To investigate the feasibility and if possible implement methods for the analysis of toxaphene in drinking waters.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT*:** *1987 04*

## 0305-13

Delisle, C
(514) 340-4962

Ecole polytechnique de Montréal; Département de génie civil

**Suivi écologique de la qualité de l'eau potable**

La truite arc-en-ciel est un poisson communément reconnu dans les tests de toxicité au Canada. Le but de ce projet est de suivre le comportement de natation de ce poisson selon la qualité de l'eau brute utilisée à l'usine de filtration de

Sainte-Rose de Laval. L'évitement possible de cette eau dépendamment des polluants présents constitue le suivi de la qualité de l'eau.

Financing/*Financement:* Ville de Laval

$15 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1988*

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## 0305-14

Desjardins, R
(514) 340-4505

Ecole polytechnique de Montréal; Département de génie civil

**Effets des caractéristiques des eaux potables sur la vitesse de corrosion.**

Les travaux de recherche proposés ont pour but d'évaluer les effets des différentes caractéristiques des eaux potables sur la vitesse de corrosion. En premier lieu, on étudie l'effet combiné de variations du pH, de l'alcalinité et du pouvoir tampon. Par la suite, on mesure les variations de vitesse de corrosion causées par des variations de débit et de pression dans la cellule de mesure. On étudie aussi les effets du chlore et du dioxyde de chlore. Enfin, à plus long terme, d'autres méthodes de mesure qui permettront de simuler les conditions observées dans les conduites seront évaluées.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$40 320

**START/*DÉBUT***: *1987* **END/*FIN***: *1991*

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## 0305-15

Desjardins, R
(514) 340-4505

Ecole polytechnique de Montréal; Département de génie civil

**Etude d'un système d'application d'alun d'une station de production d'eau potable en eau froide**

Etudier les effets du temps de contact et de la turbulence sur la formation d'un floc d'alun et sur ses caractéristiques de décantation en eau froide.

Financing/*Financement:* Ville de Laval

$3 000

**START/*DÉBUT***: *1986 08* **END/*FIN***: *1987 08*

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## 0305-16

Dutka, B
(416) 336-4923

Rivers Research Branch; National Water Research Institute; Environment Canada

**Studies on toxicant activity in river sediments and water column**

Study the spatial distribution of toxicants in sediments and the role they play in, insitu microbial processes. Publish french version of revised methods manual. Provide national and international advice on ecotoxicology-microbiology related to water and sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ministry of State for Science and Technology Biotechnology Program

Environment Canada, Parks

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

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## 0305-17

Halliday, P
(416) 445-3600

Proctor & Redfern Group

**Applying New Technology for Defluoridation of Water Supply Systems**

Review the literature and evaluate, on a pilot plant scale, the use of activated alumina for the removal of fluoride under various temperature, flow and regeneration conditions including reverse osmosis.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$13 000

**START/*DÉBUT***: *1985 03* **END/*FIN***: *1985 11*

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## 0305-18

Hargrave, W
(416) 485-7715

Gore and Storrie Limited

**Slow sand filtration for production of drinking water in small northern communities**

To investigate the design, operation and maintenance of slow sand filtration for the treatment of drinking water in small northern communities.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$150 000

**START/*DÉBUT***: *1986 11* **END/*FIN***: *1990 10*

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## 0305-19

Hilton, J
(416) 365-7337

MacLaren Plansearch

**Trace organic contaminant removal from drinking water**

To assess the effectiveness of both optimized conventional drinking water treatment and activated carbon adsorption (add-on contractor mode) for the removal of trace organic contaminants. To determine process operational parameters for both systems.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$940 900

**START/*DÉBUT***: *1985 06* **END/*FIN***: *1990 06*

## 0305-20

Huck, P
(403) 492-4738
University of Alberta; Dept. of Civil Engineering

**Quantification of the removal of the strong mutagen 'mx' from drinking water by activated carbon**

Recent studies have shown that the compound mx (3-chloro-4-(dichloromethyl) -5-hydroxy-2(5H) -furanone), first identified in pulp mill effluents, can account for up to 57% of the observed mutagenicity of chlorinated drinking water. The objective of this study is to quantify the removal capacity of granular activated carbon (GAC) for mx under conditions representative of typical water treatment practice and to identify this removal mechanism.

Financing/*Financement:* Health & Welfare Canada, Environmental Health Directorate
$84 102
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 07*

## 0305-21

Huck, P
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Evaluation of alternative drinking water treatment processes at pilot scale by mutagenicity testing**

Specific objectives include: examine alternative drinking water treatment processes (particularily different combinations of oxidants) ; monitor breakthrough of mutagenicity on granular activated carbon & quantification of removal on GAC; assess a yeast assay which may be more sensitive than the commonly used Ames Salmonella typhimurium mutagenicity assay; attempt to make correlations between mutagenicity & other surrogate parameters such as THM, TOX and UV absorbance. Final report to AWWARF.

Financing/*Financement:* American Water Works Association Research Foundation
University of Alberta
City of Edmonton, Alberta
$267 872
**START/*DÉBUT***: *1986 09* ***END/FIN***: *1988 05*

## 0305-22

Huck, P
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Use of biological processes in drinking water treatment**

The objective is to lay the groundwork for introduction of biological processes into Canadian drinking water treatment practice. In this study the extent of mineraliztion of cyanobacterial breakdown products will be determined in batch cultures, and kinetic data for biodegradation will be obtained in continuous bioreactor experiments. The results will allow preliminary sizing of biological processes to remove these compounds and hence provide an indication of feasibility.

Financing/*Financement:* National Research Council, Biotechnology Research Institute
$210 215
**START/*DÉBUT***: *1986 08* ***END/FIN***: *1988 03*

## 0305-23

Huck, P
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Computer modelling of adsorption of mutagens on XAD-2 resin**

The objective of this project is to model the adsorption of mutagenic organic compounds in drinking water on XAD-2 resin. This information should facilitate the improved design of XAD-2 sampling programs for mutagenicity and is of significance in that mutagenicity testing is a common biological screen for organic compounds and XAD-2 resin is commonly used for concentrating organics for this type of testing.

Financing/*Financement:* Health and Welfare Canada
$54 168
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 05*

## 0305-24

Huck, P
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Computer software to model the performance of carbon adsorbers in a drinking water treatment plant**

The objective of this project is to monitor and model the first full-scale application of granular activated carbon at a major Canadian drinking water treatment plant (Buffalo Pond, Saskatchewan. Serving cities of Regina and Moose Jaw). Computer adsorption models developed by Dr. J.C. Crittenden (Michigan Technological University) are being used.

Financing/*Financement:* Health and Welfare Canada
$77 578
**START/*DÉBUT***: *1985 10* ***END/FIN***: *1988 03*

## 0305-25

Huck, P
(403) 492-4738
University of Alberta; Department of Engineering

**Chemical and biological evaluation of drinking water treatment alternatives**

The objective of this study was to use biological testing in parallel with chemical identification to assess reaction products formed by the addition of the disinfectants chlorine, chloramines, chlorine dioxide and ozone during drinking water treatment. The Ames Salmonella assay was used to detect mutagenicity, and compound identification was accomplished by gas chromatography/mass spectrometry.

Financing/*Financement:* Health & Welfare Canada
$288 295
**START/*DÉBUT***: *1984 09* ***END/FIN***: *1986 08*

## 0305-26

Huck, P
Smith, D
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Process optimization for biological treatment of drinking water**

Objectives include: evaluation of extent to which biological treatment can reduce the level of disinfectant required and associated by-product formation; determination of the range of process conditions capable of producing substantial removals of total and assimilable organic carbon with acceptable levels of bacterial biomass in process effluent; establishment of whether biologically stable water can be produced following ozonation, without GAC; plus others.

Financing/*Financement:* National Sciences and Engineering Research Council

$436 122

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 10*

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## 0305-27

Koessler, A
Leclair, J
(514) 337-1205

Aquatech; Société de gestion de l'eau Inc.

**Essai de déphosphatation biologique et étude de l'effet de conditions spécifiques au Québec sur une station d'épuration de type aération prolongée, l'usine d'Asbestos.**

Apporter des modifications relativement simples aux infrastructures en agissant seulement sur les conditions d'opération (faible température et eau relativement peu chargée) des réacteurs et de pouvoir appliquer les résultats à un grand nombre d'usines d'épuration au Québec.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

Sources diverses

$113 890

**START/*DÉBUT*:** *1989 10* **END/FIN:** *1991 10*

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## 0305-28

Lagueux, J
(418) 656-7645

Université Laval; Département de médecine sociale et préventive

**Etude de faisabilité sur le développement d'une stratégie d'évaluation du potentiel génotoxique d'échantillons environnementaux.**

Proposer une stratégie d'évaluation de la génotoxicité des micropolluants de l'environnement par une batterie de bioessais in vitro. Justifier le choix des bioessais et décrire les protocoles. Proposer une méthode de validation en laboratoire des bioessais. Proposer un schéma décisionnel. Développer une stratégie de validation de la batterie par des études de population.

Financing/*Financement:* Québec, ministère de l'Environnement

$15 000

**START/*DÉBUT*:** *1987 12* **END/FIN:** *1988 03*

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## 0305-29

Mackenzie, I
(403) 427-3943

Alberta Environment

**Water treatment evaluation for Giardia cyst reduction**

To continue the investigation of the occurrence and survival of human infective Giardia cysts in water using the mobile experimental water treatment plant. This will lead to the formulation of recommendations for minimum water treatment standards in Alberta for Giardia cyst removal and/or inactivation.

Financing/*Financement:* Alberta Environment

$85 000

**START/*DÉBUT*:** *1986 03* **END/FIN:** *1987 03*

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## 0305-30

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Small lake restoration**

Evaluate oxygen injection, lime treatment, and sediment dredging as lake restoration tools.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$300 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

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## 0305-31

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in fractured rock**

Investigate the controls on the velocity and dispersion of contaminants in fractured rock.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$150 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

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## 0305-32

Novakowski, K
(416) 336-4610

Rivers Research Branch; National Water Research Institute; Environment Canada

**Hydrogeology of the Niagara frontier**

Investigate the hydrogeology of the Niagara frontier, continue monitoring of hydraulic head and geochemistry in study boreholes in Canadian network, with progress report by March, 1990. Conduct hydraulic tests in USGS boreholes with progress report by March, 1990. Continue developing theory and explanation for anomolous hydraulic head measurements in the Niagara region, progress report by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quailty

$55 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *ongoing*

## 0305-33

Patry, G
Jalbert, J-M
(416) 525-9140
McMaster University

**Simultion du traitement des eaux usées.**

Faire la sélection des modèles de simulation dynamique des usines de type boues activées; fournir aux opérateurs un outil d'évaluation du fonctionnement de l'usine en fonction des conditions d'entrée; on pourra ainsi vérifier les décisions de l'opérateur en fonction des réactions et des conséquences pour l'usine d'épuration.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Québec, ministère des Approvisionnements et Services

Lyonnaise des eaux (France)

$366 000

**START/*DÉBUT***: *1986 12* **END/FIN**: *1989 12*

## 0305-34

Prepas, E
(403) 492-3308
Department of Zoology; University of Alberta

**Use of lime to control algal growth and rooted plants in farm dugouts**

Reduce algal biomass with non toxic substance. Report prepared April 1988 and April 1989. Project will run until March 1991. Reporting will include student's thesis and papers in the primary literature. One manuscript has been accepted in primary literature.

Financing/*Financement:* Alberta Agriculture

Boreal Institute for Northern Studies

Environment Canada, Conservation & Protection

Farming for the Future, Alberta Agriculture

$122 700

**START/*DÉBUT***: *1987 04* **END/FIN**: *1991 04*

## 0305-35

Prévost, M
(514) 384-1260
Gendron Lefèbvre

**Programme d'étude sur le charbon actif biologique.**

Elaborer une méthode de suivi des filtres à charbon actif biologique; déterminer les critères de conception des filtres biologiques (temps de contact, pré-oxydation, vitesses de filtration, gestion des lavages) ; vérifier l'efficacité de matériaux de support alternatifs en filtration monocouche ou bicouche pour la filtration biologique.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnement

Sources diverses

$1 000 000

**START/*DÉBUT***: *1988 06* **END/FIN**: *1990 12*

## 0305-36

Provencher, L
Kyriacos, M
(514) 636-5023
Laboratoire des techniques de l'eau Inc

**Recherche bibliographique sur les oxydants utilisés en traitement d'eau potable.**

Bibliographie détaillée portant sur les principaux oxydants utilisés pour le traitement des eaux de consommation et sur les sous-produits d'oxydation qu'ils engendrent. Les oxydants considérés sont: le chlore, le bioxyde de chlore, les chloramines, l'ozone, le permanganate de potassium et le peroxyde d'hydrogène. Chaque oxydant ou combinaison d'oxydants devra être examiné dans le contexte d'une utilisation dans une chaîne de traitement conventionnelle, où l'on retrouve les étapes principales suivantes: oxydation/ coagulation/ floculation/sédimentation/ filtration/ désinfectation. Dans cette séquence, les oxydants participent au traitement à l'étape de l'oxydation et à celle de la désinfectation.

Financing/*Financement:* Québec, ministère de l'Environnement

$23 500

**START/*DÉBUT***: *1987 12* **END/FIN**: *1988 04*

## 0305-37

Riel, J
Comeau, Y
(514) 688-4970
Dupuis, Routhier, Ruel et associés inc.

**Optimisation de la déphosphatation biologique à la station d'épuration des eaux de Sainte-Agathe-des-Monts.**

Optimiser la déphosphatation biologique pour des eaux résiduaires dont la charge organique de pollution est très peu élevée et étudier l'influence de la variation importante de la température des eaux à traiter, ce, pour améliorer la performance de l'usine et la conception d'usines futures ou existantes utilisant un procédé de déphosphatation biologique.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

$75 500

**START/*DÉBUT***: *1989 07* **END/FIN**: *1990 07*

## 0305-38

Robertson, J
(519) 679-3857
Department of Epidemiology and Biostatistics; University of Western Ontario

**Reproductive Outcomes in Southwestern Ontario**

To carry out an epidemiological study of potential health effects caused by chemical spills and potential contamination of drinking water in the Lambton and Kent counties.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$65 000

**START/*DÉBUT***: *1986 07* **END/FIN**: *1989 09*

## 0305-39

Robertson, J
(519) 661-2162

University of Western Ontario

**Reproductive outcomes in southwestern Ontario, 1980 to 1985**

To determine if an association exists between the consumption of drinking water from the St. Clair River and abnormal outcomes of pregnancy and in the first year of life.

Financing/*Financement:* Ontario Ministry of Health

Ontario Ministry of the Environment

$185 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1989 09*

## 0305-40

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Optimisation du traitement de l'eau potable en fonction des fluctuations de la qualité de l'eau brute.**

A partir de mesures continues ou discontinues de certain paramètres représentatifs de la qualité de l'eau brute, ajuster les dosages des produits chimiques utilisés en usine de filtration de l'eau de consommation.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$2 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1989 04*

## 0305-41

Simard, A
Emond, M
(418) 648-0858

ADS Associés Ltée; Groupe-conseil

**Optimisation de la conception des étangs non aérés à l'aide d'une étude portant sur l'efficacité de systèmes en place dans quatre municipalités québécoises.**

Observer l'évolution progressive des caractéristiques chimiques des eaux de traitement pour évaluer la pertinence d'un temps de rétention de 150 jours en saison froide (en fonction des normes de rejet et des autres facteurs ambiants) ; analyser les éléments de réaction et les microorganismes pour connaître la nature et les vitesses des différentes réactions présentes (régime facultatif ou encore strictement anaérobique).

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

$99 876

**START/*DÉBUT***: *1989* ***END/FIN***: *1991 10*

## 0305-42

Smith, D
(403) 432-4138

Department of Civil Engineering; University of Alberta

**Investigation of Alternative PAC's for use in Edmonton**

Three components: 1. Review and modify tests for powdered activated carbon performance. 2. Test possible PAC's. 3. Develop evaluation criteria.

Financing/*Financement:* City of Edmonton, Alberta

**START/*DÉBUT***: *1986 10*

## 0305-43

Smith, D
(403) 432-4138

University of Alberta; Department of Civil Engineering

**Water disinfection with ozone**

Three components: 1. Study of clear water destruction of microorganisms. 2. Study of the kinetics of competing reactions. 3. Development of improved contactor design.

Financing/*Financement:* Natural Sciences and Engineering Research Council

**START/*DÉBUT***: *1988 04*

## 0305-44

Swanson, S
Peterson, H
(306) 933-8174

Saskatchewan Research Council

**Algae control in farm ponds**

Investigate causes and possible treatments of persistent nuisance algae blooms in farm dugouts in the Melfort - Tisdale area that are used for drinking water. Report available in April 1988.

Financing/*Financement:* Agriculture Development Fund

Saskatchewan Research Council

$139 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1989 06*

## 0305-45

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2208)**

To determine the health significance of 1) micro-organisms in drinking water, 2) the organic fraction of drinking water or individual components thereof, and 3) inorganic substances in drinking water.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$660 471

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0305-46

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2209)**

To identify the health hazards posed by point-of-use treatment devices.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$107 820

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *ongoing*

## 0305-47

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2211)**

Development of appropriate legislation, regulations, policies, guidelines, and standards to safeguard drinking water quality.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$480 567

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *ongoing*

## 0305-48

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2212)**

To assess the impact on health of water treatment technologies.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$389 307

**START/*DÉBUT*:** *1985 04* **END/*FIN*:** *ongoing*

## 0305-49

Trudell, M
Ched, D
(403) 438-7506

Alberta Research Council; Terrain Sciences Dept.

**Assessment of potential groundwater contamination by migration of enhanced oil recovery (EOR) production fluids**

To evaluate the potential for contamination of shallow aquifers by production fluids from enhanced oil recovery.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Alberta Research Council

$58 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0305-50

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Développement d'une méthode utilisant les boues des usines de traitement d'eau potable pour mesurer la concentration des métaux toxiques dans l'eau des rivières.**

Mettre au point un échantillonneur automatique à échelle réduite pour des prélèvements d'eau de rivière: un appareil qui prélève des échantillons représentatifs de la qualité de l'eau (qui varie constamment pendant des périodes allant de quelques jours à quelques semaines; un appareil qui concentre les métaux à l'état de traces de façon à les doser avec précision et de façon fiable.

Financing/*Financement:* Québec, ministère de l'Environnement

$10 300

**START/*DÉBUT*:** *1985 12* **END/*FIN*:** *1987 05*

## 0305-51

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Drinking water treatment for giardia cyst removal and inactivation**

To investigate the effectiveness of Cl2, Cl02, chloramine and ozone of giardia cysts. Filtration for the removal of cysts is also being invesigated.

Financing/*Financement:* Alberta Environment Research Trust

Alberta Environmental Centre

**START/*DÉBUT*:** *1985 09*

## 0305-52

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Use of PAC for water quality improvement at the City of Edmonton**

To evaluate the effectiveness of PAC in a slurry recirculating clarifier for the removal of organics. Thesis (University of Alberta) available, publications in preparation and green report (AEC) to be prepared.

Financing/*Financement:* City of Edmonton, Alberta

Alberta Environmental Centre

**START/*DÉBUT*:** *1987 09*

## 0305-53

van Roodselaar, A
Gray, B
(403) 632-6761

Alberta Environmental Centre

**Elk Island drinking water treatability study**

To evaluate the current treatment system at Elk Island National Park. To study the addition of ozone and GAC technology to overcome current problems with drinking water quality, especially taste and odour.

Financing/*Financement:* Environment Canada Parks

Alberta Environmental Centre

**START/*DÉBUT*:** *1988 05*

## 0305-54

van Roodselaar, A
Wilson, M
(403) 632-6761

Alberta Environmental Centre

**Treatability of surface waters contaminated with pulp mill effluents**

To investigate the availability and performance of technology necessary to treat surface waters contaminated with pulp mill effluents when these waters are to be used for drinking.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT*:** *1988 08*

## 0305-55

Wallis, P
(403) 220-5355

Kananaskis Centre for Environmental Research; University of Calgary

**Water treatment procedures for removal of Giardia cysts**

To develop water treatment procedures using conventional equipment and a mobile water treatment plant for removal of Giardia cysts.

Financing/*Financement:* Alberta Environment

**START/*DÉBUT*:** *1985 05* **END/*FIN*:** *1988 04*

## 0305-56

Wishart, D
(403) 420-5210

Interprovincial Pipe Line (NW) Ltd.

**Aquatic monitoring studies of the Norman Wells to Zama Pipeline**

To determine if pipeline construction or operation were contributing to degradation of aquatic habitats or water quality along the pipeline route. Interim and final reports are available for viewing from Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$250 000

**START/*DÉBUT*:** *1984 01*

## 0306-1

Alikhan, M
Bagatto, G
(705) 675-1151

Laurentian University; Biology

**Copper, cadmium, iron, magnesium, manganese & nickel concentrations in crayfish from freshwater rese**

To measure the amount of heavy metals in various tissues of the freshwater crayfish as a function of the distance of the emission site from the habitat. Reports are available.

Financing/*Financement:* Natural Sciences and Engineering Research Council

Centre in Mining & Mineral Exploration

$16 900

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 07*

## 0306-2

Alikhan, M
Zia, S
(705) 675-1151

Laurentian University; Biology

**Lab study, relationship between levels of copper & nickel in water, and uptake in tissue of crayfish**

To study the relationship between levels of copper and nickel in water, and their uptake and accumulation by various body tissues in the crayfish. No publication available as of yet.

Financing/*Financement:* Natural Sciences and Engineering Research Council

Centre in Mining and Mineral Exploration

$16 900

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 06*

## 0306-3

Anderson, P
(514) 848-3391

Université Concordia; Laboratoire d'écotoxicologie

**Modèles écotoxicologiques de polluants chimiques dans l'environnement aquatique**

Screens chemical pollutants as risks to the wellbeing of aquatic organism by studying their availability and toxicity; investigates through the use of laboratory models, the effects of toxicants on organism, their populations and communities; creates water quality criteria.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$60 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0306-4

Arts, M
(306) 975-6012

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Relationship between food quality and zooplankton lipids content**

Investigate the relationship between food quality and quantity and zooplankton energetic reserves (lipids). Investigate the effects of environmental stress (e.g. high salinity) on zooplankton energetic reserves.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

## 0306-5

Austin, A
Lucey, W
(604) 721-8852

University of Victoria

**Productivity of periphyton communities, their biochemical and nutritional status in aquatic systems**

Enhancement and control of growth and productivity for use as feedstock in aquaculture system. Assessment of nutritive value of periphyton biomass, by feed trials, to determine efficacy for use in specialized diets. Publications expected spring of 1988.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

National Science & Engineering Research Council

Science Council of British Columbia

$90 000

**START/*DÉBUT***: *1986 05*

## 0306-6

Baddaloo, E
(403) 427-3943

Alberta Environment

**Aquatic plant biological control (Elecocharis acicularis)**

To investigate the use of Spike rush of Eleocharis acicularis to displace plants which reduce the flow of water, plug sprinkler systems, and in some cases flood farmlands. (Report available: Alberta Environment. Report No. RMD 87/40).

Financing/*Financement:* Alberta Environment

$21 800

**START/*DÉBUT***: *1985 09* ***END/FIN***: *1987 03*

## 0306-7

Baker, R
(819) 953-1693

Environment Canada; Conservation & Protection; Management of Emergencies Branch

**Evaluation of the sediment quality triad approach to monitoring the degradation of sediment by contaminants**

The investigation of the physical, chemical and biological effects of dredging and dumping of contaminated sediments. To develop the 'triad approach' to effects monitoring for routine application in Canada, wherever toxic sediment has been or could become a serious problem.

Financing/*Financement:* Environment Canada, Conservation & Protection

Federal Environmental Assessment Review Office

Department of Fisheries & Oceans Canada

$55 000

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1990 06*

## 0306-8

Barchard, W
(902) 426-8301

Environment Canada; Conservation & Protection

**Release of oil-based drilling fluids & oily cuttings into the Canadian Northwest Atlantic**

Laboratory and field evaluations of long and short-term environmental effects of oil-based muds and contaminated cuttings. Both diesel oil and naphthenic and parafinic alternates were evaluated.

Financing/*Financement:* Panel on Energy, Research & Development

Environment Canada, Conservation & Protection

Environment Canada, Conservation & Protection

$75 000

**START/*DÉBUT*:** *1983 02* **END/FIN:** *1987 03*

## 0306-9

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Application of three alternate methods of assessing wetland value to Greenock Swamp, Ontario**

Report available from M. Bardecki.

Financing/*Financement:* Canadian Wildlife Service

$18 700

**START/*DÉBUT*:** *1988 03* **END/FIN:** *1988 10*

## 0306-10

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Evaluation of climate change impacts on wetlands**

Report in support of IPCC Working Group II.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$3 000

**START/*DÉBUT*:** *1989 06* **END/FIN:** *1989 09*

## 0306-11

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Development of an economic-based wetland evaluation system for Canada**

Report available from M. Bardecki.

Financing/*Financement:* Environment Canada, Conservation & Protection

$12 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1987 10*

## 0306-12

Bardecki, M
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Wetland conservation in Tabasco and Campeche States, Mexico**

Field study of Usamacinta and Grijalva wetlands in Mexico.

Financing/*Financement:* Social Sciences and Humanities Research Council

$1 740

**START/*DÉBUT*:** *1986 02* **END/FIN:** *1986 03*

## 0306-13

Barica, J
(416) 336-4785

Lakes Research Branch; National Water Research Institute; Environment Canada

**IJC areas of concern and other degraded ecosystems - sustainability of aquatic ecosystems**

To gather and disseminate information on long-term trends and efficacy in Great Lakes rehabilitation programs and large scale ecological calamities elsewhere. To carry out limnological research in selected areas of concern to supplement remedial action plans.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$225 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1993 03*

## 0306-14

Baxter, R
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Reductive dehalogenating environmental contaminants**

To evaluate the role of reductive processes (including but not limited to dehalogenation) in the degradation of environmental contaminants using sediments from representative

lakes in Jack Lake study area MODLES and elsewhere as appropriate.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

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## 0306-15

Bégin, Y
(418) 656-5630

Université Laval; Centre d'études nordiques

**Variations du niveau des grands lacs du Québec nordique**

L'objectif principal de cette recherche est de reconstituer les oscillations décennales et séculaires des grands lacs localisés le long du gradient bioclimatique marquant le passage de la forêt boréale à la toundra. L'hypothèse générale à valider stipule que les oscillations de l'ensemble des grands lacs répondent à des changements majeurs dans le régime pluvio-thermique caractérisant les climats des régions boréales et subarctique. La reconstitution du dynamisme du système riverain des lacs s'appuie sur l'observation des processus littoraux saisonniers et sur l'analyse dendrochronologique et l'étude des populations végétales.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

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## 0306-16

Berrill, M
(705) 748-1455

Dept. of Biology; Trent University

**Effects of pyrethroid pesticides on hatching success and metamorphosis of anuran amphibians**

none given

Financing/*Financement:* Trent University

World Wildlife Fund

Natural Sciences & Engineering Research Council

$80 000

**START/*DÉBUT*:** *1988 04*

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## 0306-17

Berrill, M
(705) 748-1455

Dept. of Biology; Trent University

**Changes in blackfly diptera: simulidae communities in central Ontario between 1937 and 1986, is acidification a possible cause**

none given

Financing/*Financement:* Ontario Ministry of Environment

$8 807

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

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## 0306-18

Blackwell, B
not yet known

Sandwell Swan Wooster Inc.

**Improved gas mixing in kraft recovery boilers**

Improved gas mixing in kraft recovery boilers for increased energy efficiency, reduced TRS emissions and increased capacity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Industry (eight from pulp and paper sector)

$45 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 02*

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## 0306-19

Boisvert, M
(819) 376-5053

UQTR; Groupe de recherche sur les insectes piqueurs (GRIP)

**Etude de la persistance d'un insecticide biologique (Bacillus thuringiensis variété israelensis) dans l'environnement aquatique.**

Etudier la persistance de l'activité toxique du larvicide sous nos conditions environnementales; étudier l'importance des facteurs environnementaux sur la persistance du B.T.I.; déterminer le rôle des cellules végétatives et des spores de B.T.I. dans un cas de recyclage de l'activité toxique résiduelle.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

Organisation mondiale de la santé

$18 000

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## 0306-20

Borstad, G
(604) 656-5633

G.A. Borstad Associates Ltd.

**Remote sensing and surface data in Barkley Sound, support to 1987 marine salmon survival program**

Analysis of remote sensing data, mapping of phytoplankton chlorophyll-a by fluorescence, descriptive oceanography of Barkley Sound, Vancouver Island. Final report delivered to DFO, April 1988.

Financing/*Financement:* Department of Fisheries and Oceans Canada

$25 000

**START/*DÉBUT*:** *1987 08* **END/FIN:** *1988 04*

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## 0306-21

Borstad, G
(604) 656-5633

G.A. Borstad Associates Ltd.

**Compact airborne spectrographic imager (CASI) - software and applications development**

Development of software for the CASI; calibration, analysis and image processing. Development of applications, demonstration projects.

Financing/*Financement:* Itres Research Ltd.

GA Borstad Associates Ltd.

## 0306-22

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Experimental rivers research**

To determine the factors controlling the kinetics of algal colonization and growth in riverine systems.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0306-23

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**River nutrient spiralling**

To determine the extent of downstream influence of point source nutrient loadings in rivers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0306-24

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**River macrophyte ecology**

To determine what factors govern the distribution and abundance of macrophytes in Canadian prairie rivers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1989* **END/FIN:** *ongoing*

## 0306-25

Bourbonnière, R
(416) 336-4547

Rivers Research Branch; National Water Research Institute; Environment Canada

**Natural and anthropogenic organics related to oil sands development**

Initiate study by participation in multi-disciplinary reconnaissance program in the Athabasca River area. Complete committments to LRTAP Natural Acidity (publication).

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1993 03*

## 0306-26

Bourget, E
(418) 656-5233

Université Laval; Département de biologie

**Echelles d'hétérogénéité du substrat rocheux et répartition des organismes benthiques intertidaux.**

Evaluation de l'importance de l'hétérogénéité du milieu physique intertidal pour la structure des peuplements benthiques intertidaux dans les régions nordiques (fleuve et golfe du Saint-Laurent).

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$142 500

**START/*DÉBUT*:** *1985* **END/FIN:** *1988*

## 0306-27

Bourget, E
Cardinal, A
(418) 656-5233

Université Laval; Département de biologie

**Le milieu benthique littoral de l'estuaire et du golfe du Saint-Laurent: aspects dynamiques et fonctionnels.**

Comprendre le fonctionnement de l'écosystème littoral et particulièrement de la composante benthique dans l'estuaire et le golfe du Saint-Laurent.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$124 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1988*

## 0306-28

Boyce, F
(416) 336-4921

Lakes Research Branch; National Water Research Institute; Environment Canada

**Assessment of sediment trap studies 1985-89**

To summarize report on sediment trap studies undertaken in Lake St. Clair, Lake Ontario, Hamilton Harbour and hydraulics flume 1985-89. To test different sediment trap designs under controlled conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0306-29

Brouillet, L
Bouchard, A
(514) 256-7511

Université de Montréal; Institut botanique

**Etudes sur les plantes vasculaires rares et menacées des tourbières du sud-ouest du Québec.**

But: Etablir le statut actuel des populations d'espèces rares des tourbières du sud-ouest du Québec, un habitat fortement menacé et les facteurs critiques qui pourraient jouer dans leur restriction. Objectifs: Déterminer les priorités de conservation pour ces espèces et les actions à mener pour les aménager, si nécessaire.

Financing/*Financement:* Fondation pour les espèces menacées du Québec

$7 600

**START/*DÉBUT*:** *1987 06*

## 0306-30

Brown, D
Goldsborough, L
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Impact of the forestry herbicide glyphosate on aquatic environment**

To determine the aquatic impacts of the aerial spraying of forestry herbicides within Manitoba. The primary focus is on the herbicide glyphosate and its effects on algal periphyton, emergent vegetation and submergent vegetation.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Canada/Manitoba Forest Renewal Agreement

$209 500

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1990 03*

## 0306-31

Brownlee, B
(416) 336-4706

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in rivers**

Research on improved methods of measuring and modelling transport of contaminants on suspended particulate matter in rivers. The emphasis will be on oil sands related contaminants (PAHs and related compounds) in the Athabasca River.

Financing/*Financement:* Environment Canada, Conservation and Protection

$700 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1994 03*

## 0306-32

Bruton, J
(416) 336-4922

Rivers Research Branch; National Water Research Institute; Environment Canada

**Expert systems analyses of remote in-situ basin data**

To conduct research directed towards the applications of expert systems (specifically DADS and RAISON) to both remotely acquired optical data and existing in-situ data collected over and/or in basins.

Financing/*Financement:* Environment Canada, Conservation and Protection

$500 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1994 03*

## 0306-33

Budd, K
(613) 545-6154

Biology; Queen's University

**Mechanism of tolerance of arsenite in a blue-green algae**

unavailable

Financing/*Financement:* Queen's University

$1 400

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0306-34

Bukata, R
(416) 336-4670

Rivers Research Branch; National Water Research Institute; Environment Canada

**Remote sensing of river systems and basins**

To conduct through both experimental and theoretical research, studies of water quality in rivers and lakes, groundwater flow in freshwater basins, and remote sensing of aquatic resources on local and/or global basis.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1999 03*

## 0306-35

Burnison, B
(416) 336-4706

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of organic contaminants on microbial activities in natural waters**

To determine the effect of organic contaminants on bacterial productivity in various lakes. To determine the effect of organic contaminants on bacterial heterotrophy in various lakes. To further characterize the chemical composition of previously isolated DOC fractions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$450 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0306-36

Cardinal, A
(418) 656-5001

Université Laval; Groupe inter. de recherche en océanographie du Qué. (GIROQ)

**Ecologie et écophysiologie de la microflore marine benthique de substrats durs.Utilisation de cette microflore par les organismes brouteurs herbivores.**

Détermination des rythmes d'activité photosynthétique de la microflore marine benthique des substrats durs, établissement des périodes de détachement du substrat, détermination de l'utilisation qu'en font respectivement les différents types d'organismes herbivores tant benthiques que planctoniques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$135 000

**START/*DÉBUT***: *1983* ***END/FIN***: *1991 03*

## 0306-37

Carey, J
(416) 336-4693

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant pathways in receiving waters**

To identify factors controlling bioaccumulation of atmospheric contaminants in lake organisms. Investigate contaminant transport in Fraser River estuary. Begin study on fate and effect of pulp mill related chlorinated organics in receiving waters. Evaluate adverse effects of pulp mill effluents on fish (DFO-Hodson). Investigate processes controlling fate of TCMTB in Fraser River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$650 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0306-38

Carignan, R
(418) 654-2524

Université du Québec; INRS-eau

**Géochimie et géochronologie sédimentaire récente de huit lacs du Témiscamingue.**

Des dosages de 210Pb, C, S, Ca, Mg, Fe, Mn, Al, Cu, Pb, Zn et l'analyse paléo-écologique des chrysophycées fossiles ont été effectués dans les sédiments de huit lacs du Témiscamingue (montrant un Ph actuel variant entre 4, 9 et 6, 5) dans le but d'y reconstruire la chronologie de sédimentation des contaminants d'origine anthropique et de vérifier l'hypothèse de l'acidification récente de certains de ces lacs.

Financing/*Financement:* Québec, ministère de l'Environnement

$43 300 **END/*FIN***: *1989 04*

## 0306-39

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Biogéochimie de l'interface eau-sédiment**

Caractérisation et quantification du transport de substances dissoutes à l'interface eau-sédiment des lacs. Appliquer ces études au transport de substances nutritives (P, N, Si) et toxiques (métaux traces) entre les sédiments superficiels et la colonne d'eau. Préciser le rôle des invertébrés benthiques dans le transport des substances dissoutes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$35 000

## 0306-40

Chambers, P
(306) 975-5592

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Reconnaissance study of the Qu'Appelle system**

To evaluate the present status of water quality in the Qu'Appelle system, particularly with respect to aquatic macrophyte and cyanobacterial nuisance growths, and identify and make recommendations for future management advice, surveys or research.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* ***END/FIN***: *1989*

## 0306-41

Charlton, M
(416) 336-4758

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effectiveness of pollution abatement in Hamilton Harbour**

To determine effects of recent abatements at Hamilton STP as a way of finding total reductions needed. Begin study on zinc availability under high and low oxygen conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$540 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0306-42

Chau, Y
(416) 336-4707

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biochemical indicators for studying metal pollution**

Use of metallothioneins (metal binding proteins) and 'Total Nucleotides' in biota to study metal stress and environmental health. Investigation of problem metals in the Athabasca River by analysis of sediment and fish samples.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0306-43

Cheam, V
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Development of liquid chromatography (LC) methodology for analysis of environment samples**

To develop an ion chromatographic method for determination of organic acids. Investigate application of LC for pulp and paper effluents analysis.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

## 0306-44

Chisholm, P
(519) 824-4120
University of Guelph; School of Engineering

**Fish waste production - rainbow trout**

To develop a preliminary model to estimate waste production from rainbow trout culture facilities, in relation to fish growth. Test the preliminary waste production model based upon sampling of wastes produced by actual fish populations at selected growth stages.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$22 900

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

## 0306-45

Clark, M
(604) 387-9947
British Columbia Ministry of Environment & Parks

**Determination of metals in fish tissues**

Methodology for the preparation of gill, muscle and liver tissues has been developed using a combination oxygen-plasma ashing and acid digestion. Scans of 68 elements were obtained using an ICP-MS at Elemental Research. The precision achieved in this work will make this method useful to extend to molluscs in support of the sediment bioassay work which has already begun. Determination of metallothionien was also made.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0306-46

Cluis, D
(418) 654-2535
Université du Québec; INRS-eau

**Analyse des séries chronologiques.**

Etude des structures et des relations entre séries chronologiques en sciences de l'eau. L'objectif est d'aider à l'analyse de phénomènes environnementaux complexes: ex: pluies acides: relation entre paramètres précipitation, lac exutoire; efficacité entrée-sortie des usines d'assainissement municipales.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$60 000

**START/*DÉBUT*:** *1980*

## 0306-47

Clulow, V
(705) 675-1151
Laurentian University; Biology

**Radionuclides in fish, water, and sediments of lakes near Elliot Lake Ontario**

Measurement of Ra, Po, Pb, Th, U in tissues of fish and calculation of transfer parameters from environment and risk to human consumers. To be published as AECB report.

Financing/*Financement:* Atomic Energy Control Board

**START/*DÉBUT*:** *1989 07* **END/FIN:** *1989 12*

## 0306-48

Clulow, V
(705) 675-1151
Laurentian University; Biology

**Study of radionuclide uptake by beaver and grouse in the Serpent River Basin**

To study the occurrence and movements of Ra-226 in water, vegetation, aquatic mammals and game birds in the region of the Serpent River Basin; calculation of transfer coefficients. Report available Dec. 1988, pp 55 plus appendices.

Financing/*Financement:* Atomic Energy Control Board

$55 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 04*

## 0306-49

Coakley, J
(416) 336-4881
Lakes Research Branch; National Water Research Institute; Environment Canada

**Sources and transport of contaminated fine sediments, Great Lakes and St. Lawrence system**

To develop and field test means of identifying sources, transport rates and patterns of contaminated fine sediments and apply to specific cases in the Lower Great Lakes and St. Lawrence River system.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0306-50

Constable, M
(403) 468-8038
Environment Canada; Environmental Protection

**Bromoxynil in prairie wetlands**

To assess the levels and persistence of bromoxynil in water and sediment.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$5 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0306-51

Constable, M
(403) 468-8038
Environment Canada; Environmental Protection

**Toxicity and degradation of carbofuran**

To determine the effects of carbofuran on fish and aquatic insects.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$27 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0306-52

Constable, M
(403) 468-8038

Environment Canada; Conservation and Protection; Environmental Protection

**Assessing the environmental hazards of ambient levels of lindane**

To determine if concentrations of lindane found in prairie rivers is toxic, on a chronic basis, to representative aquatic organisms.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1988 06*

## 0306-53

Côté, R
(418) 545-5079

Université du Québec à Chicoutimi; Dep. des sciences fondamentales

**Toxicité du cuivre sur l'ultrastructure des cellules phytoplanctoniques du Saguenay**

1) Caractériser les pertubations à long terme du cuivre sur l'ultrastructure cellulaire (e.g. membrane plasmique, chloroplaste, mitochardries, parvi cellulaire). 2) relier les effets structuraux aux effets physiologiques (e.g. synthèse de protéines) : 3) vérifier la réversibilité possible de ces processus quand la cellule revien dans un milieu non stressant.

Financing/*Financement:* Fonds institutionnel de recherche

Fondation UQAC

Conseil de recherche en sciences naturelles et en génie

$24 385

## 0306-54

Couillard, M
(514) 521-4927

Environnement Illimité Inc

**Evaluation de la biomasse piscicole à l'aide de l'hydro-acoustique.**

Evaluer les potentiels et contraintes associés à l'utilisation de l'hydro-acoustique pour évaluer la biomasse piscicole dans un lac. Préciser la période optimale (saison, heure) pour effectuer les inventaires hydro-acoustiques.

Financing/*Financement:* Québec, ministère du Loisir, de la Chasse et de la Pêche

$15 000

**START/*DÉBUT***: *1987 08* **END/*FIN***: *1988 02*

## 0306-55

Couture, P
(418) 654-2524

Université du Québec; INRS-eau

**Bioindicateurs de stress et suivi du comportement toxique d'effluents en rivière: développement méthodologique au niveau de la communauté périphytique.**

Ce projet vise à élaborer une démarche méthodologique originale et relativement simple pour évaluer l'impact environnemental sur les communautés aquatiques qui est associé aux déversements d'effluents en rivière (toxicité non persistante et toxicité persistante) en utilisant les populations périphytiques indigènes. Le projet rejoint la priorité relative au développement d'indicateurs de stress capables de rendre compte de l'état et de l'évolution de la santé du milieu aquatique québécois. Le projet s'étale sur trois ans. Les objectifs et les résultats attendus sont réalistes. La méthodologie mise au point sera utile au Ministère, car elle lui permettra de statuer sur le degré d'épuration des effluents requis pour protéger adéquatement l'écosystème aquatique.

Financing/*Financement:* Québec, ministère de l'Environnement

$101 660

**START/*DÉBUT***: *1988 05* **END/*FIN***: *1991 02*

## 0306-56

Couture, P
(418) 654-2578

Université du Québec; INRS-eau

**Modifications des propriétés structurelles et fonctionnelles aux niveaux population et communauté phytoplanctonique: mécanismes d'acclimatation**

La présente étude consiste à identifier et comprendre le fonctionnement de mécanismes de tolérance induits chez des populations phytoplanctoniques en présence de polluants (CD ou effluent d'une usine chlore-alcali). On précisera en particulier: 1) le rôle de la respiration (phosphorylation oxydative) en tant que générateur fournissant l'énergie nécessaire au maintien de l'intégrité cellulaire dans le processus du développement et de la tolérance; 2) les répercussions des modifications des taux de photosynthèse et de respiration sur le taux de croissance; 3) les modifications dans l'ultrastructure cellulaire et dans la qualité de produits de synthèse concomitantes à l'acquisition de la tolérance.

Financing/*Financement:* Université du Québec, Programme de développement académique du réseau

Fonds institutionnel de recherche

$25 285

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 06*

## 0306-57

Couture, P
(418) 654-2578

Université du Québec; INRS-eau

**Mode d'action de substances altéragènes au niveau communauté phytoplanctonique**

Les objectifs de la présente demande visent à étudier les mécanismes d'acclimatation de la communauté microbienne aquatique suite à des déversements de substances altéragènes. On vise à comprendre comment des modifications dans des proprietés structurelles (chl a, somme des adénylates, ADN, dénombrement, structure des populations) et fonctionnelles (P/B, charge énergétique, ATP/AMP, ATP/ADP) de communauté microbienne indigène peuvent être associés à un processus d'acclimatation en modulant les taux de croissance et la structure de la communauté indigène. A long terme, on définira une approche écotoxicologique pour déterminer les risques environne-

mentaux des déversements de substances toxiques au niveau des producteurs primaires.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$5 000

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1987 05*

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## 0306-58

Couture, R
Magnan, P
(819) 376-5053

UQTR; Laboratoire communautés aquatiques

**Rôle de la compétition dans l'organisation des communautés de poissons.**

Est-ce que les mécanismes impliqués dans les interactions entre espèces taxonomiquement distantes sont de même nature que ceux généralement observés entre les espèces taxonomiquement semblables? Comment peut-on prédire la 'combinaison de compétiteurs' qui peuvent coexister dans un même milieu, en regard de la théorie de la similitude minimum (angl.: limiting similarity) ?

Financing/*Financement:* Fonds personnel

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## 0306-59

Cross, S
(604) 655-3255

Aquametrix Research Ltd.

**Waste material dispersion characteristics and deposition rates under B.C. salmon farming operations**

To provide information on deposition rates and composition of waste material (fecal/food waste) from a moderate sized salmon farm, to examine the dispersion of this material around the study farm, and to estimate the percentage of food material lost as a result of feeding practices at the participating farm.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$6 100

**START/*DÉBUT*:** *1987 11*

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## 0306-60

Crowder, A
unavailable

Queen's University; Dept. of Biology

**A survey of the macrophytes in the Bay of Quinte**

Survey (map and speciation) of emergent and subemergent aquatic plants in the Bay of Quinte littoral zone. Compare survey findings to other measurable parameters of water quality in an effort to estimate recent water quality and ecosystem changes. Compare findings to historical biomass and species data to record recent changes in macrophyte beds in the littoral zone.

Financing/*Financement:* Ontario Ministry of Environment

$7 000

**START/*DÉBUT*:** *1988 05*

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## 0306-61

Crowder, A
(613) 545-6139

Biology; Queen's University

**Metal uptake and ecology of wetland roots**

unavailable

Financing/*Financement:* Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1992 03*

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## 0306-62

Crowder, A
(613) 545-6139

Biology; Queen's University

**Metal contamination of wetland food chain in the Bay of Quinte**

unavailable

Financing/*Financement:* Wildlife Toxicology Fund

Ontario Ministry of Environment

$90 945

**START/*DÉBUT*:** *1987* **END/*FIN*:** *1989 00*

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## 0306-63

Currie, D
(613) 564-3458

University of Ottawa; Biology

**Patterns and processes in community structure**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$25 500

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

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## 0306-64

Davies, R
(403) 220-5275

Department of Biological Sciences; University of Calgary

**Life history, flexibility and ecophysiology of freshwater macroinvertebrate predators**

To determine whether the life history strategy and aspects of the ecophysiology of macroinvertebrate predators in a lake changes under natural and unnatural perturbations. Work will be published in referred journals. No final report.

Financing/*Financement:* Natural Sciences & Engineering Research Council

$144 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

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## 0306-65

Davies, R
(403) 220-5275

Department of Biological Sciences; University of Calgary

**Can acridine-orange analysis of neuronal RNA be used to test for chronic toxicity?**

Acradine-orange can be used to estimate RNA synthesis. If RNA synthesis changes, it will have profound effects on the physiology of the animal and hence its fitness. The effects of various perturbatives (oxygen, temperature and salinity stress) will be examined on freshwater invertebrates in terms of changes in RNA synthesis as measured by acradine-orange. Work will be published in referred journals. No final report.

Financing/*Financement:* Natural Sciences & Engineering Research Council

$10 890

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 04*

## 0306-66

Davies, R
(403) 220-5275

Department of Biological Sciences; University of Calgary

**Energy allocation in species as a test for chronic toxicity**

Changes in energy allocation to various functions somatic growth, reproductive growth; repiration - active, resting; activity) will have profound effects on fitness as assessed by basic population growth parameters. Using Durstan, a commonly used insecticide, the chronic effects on non-target species of lentic macroinvertebrates will be examined. Work will be published in referred journals with an annual interim report and a final report.

Financing/*Financement:* Natural Sciences & Engineering Research Council

$58 742

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1989 10*

## 0306-67

Day, K
(416) 336-4659

Rivers Research Branch; National Water Research Institute

**The biological impact of agricultural runoff in streams: the effects of nutrient contaminant interactions on attached algae**

To develop the methodology to determine the effects of pesticides on attached algae found growing in aquatic ecosystems adjacent to agricultural land. To determine the effects of various levels of nutrients (N, P) on the toxicity of the herbicides, atrazine and metalochlor, to attached algal communities.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0306-68

Day, K
(416) 336-4659

Environment Canada; National Water Research Institute

**Biological impact of agricultural run-off from conventional vs. conservation tillage: Effects on attached algae in streams**

To compare the effects of run-off from land subjected to conservation vs. conventional tillage on periphyton in two sub-watersheds in the Kintore Creek water basin. Report by the end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$27 500

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0306-69

Day, K
(416) 336-4659

Rivers Research Branch; National Water Research Institute; Environment Canada

**Methods to determine the toxicity, fate and effects of contaminants in stream ecosystems**

To conduct research on the development of laboratory and in situ toxicity tests to determine the effects of ambient concentrations of non-point source contaminants (particularly pesticides) on stream ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

Ontario Ministry of Environment

$400 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1992 03*

## 0306-70

Day, K
(416) 336-4659

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Run-off and stream invertebrates**

To assess the impact of agricultural run-off on stream invertebrates.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0306-71

de la Noüe, J
(418) 656-3952

Groupe de recheche en recyclage biologique et aquiculture (GREREBA)

**Optimisation de cultures intensives de microalgues par fluctuations lumineuses rapides et incidence de celles-ci sur la qualité de la biomasse.**

Etablir les paramètres d'application du rendement énergétique de cultures ( biomasse produite/énergie fournie) ; pour différents types d'éclairement (fluctuant ou stable, monochromatique ou non), résoudre le problème de choix, de la fiabilité et du temps de réponse du système de mesure de l'intensité lumineuse; optiminer un système d'éclairage intermittent; étudier les conséquences d'un régime lumineux

intermittent sur la prise en charge des nutriments et la qualité de la biomasse. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Club Rotary

Fonds pour la formation des chercheurs et l'aide à la recherche

$60 000

**START/*DÉBUT***: *1984 01* **END/*FIN***: *1989 12*

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## 0306-72

de la Noüe, J
Dakhama, A
(418) 656-3952

Groupe de recheche en recyclage biologique et aquiculture (GREREBA)

**Etude des interactions entre microalgues et bactéries.**

Documenter les inhibitions-stimulations de couples identifiés microalgues-bactéries; établir la spécifité et la stabilité de l'interaction; déterminer la nature de l'interaction; évaluer l'application de ces connaissances aux systèmes de cultures intensives de microalgues. Rapport disponible.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Gouvernement du Maroc

$30 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1990 12*

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## 0306-73

Delorme, L
Harper, N
(416) 336-4788

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of climate on water quality of Canadian lakes**

To evaluate the relationship between climate and water quality and certain organisms using proxy data, by: characterizing fossil ostracodes found in shallow lakes; interpreting chemical, physical and climate variables of shallow lakes from ostracodes; further understanding the use of ostracodes as paleolimnological and paleoclimatic indicators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$500 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1993 03*

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## 0306-74

Desrosiers, G
(418) 724-1765

Université du Québec à Rimouski; Département d'océanographie

**Variations intrapopulations des annélides polychètes (Nereis virens et Nephtys caeca) au niveau des baies littorales de l'estuaire maritime du Saint-Laurent.**

Connaître les cycles de vie des espèces Nereis virens et Nephtys caeca (des stades larvaires aux stades adultes). Evaluer les paramètres abiotiques et biotiques qui agissent sur les variations intrapopulations de ces deux espèces. Evaluer le rôle de la prédation endobenthique de ces deux espèces. (Etude expérimentale d'inclosure et d'exclosure, augmentation du facteur densité/ prédation). Etude écoéthologique de ces deux espèces dans le milieu (expérience en laboratoire et sur le terrain).

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

$49 000

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## 0306-75

Dionne, J-C
(418) 656-5879

Université Laval; Centre d'études nordiques

**Evolution des rives du Saint-Laurent: érosion et sédimentation**

Mettre en évidence les zones subissant de l'érosion; connaître les mécanismes et les causes de l'érosion; déterminer les processus et le taux de sédimentation sur les rivages; obtenir une connaissance adéquate des rivages en vue de leur protection et d'une saine gestion et utilisation.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

**START/*DÉBUT***: *1982*

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## 0306-76

Dionne, J-C
(418) 656-5879

Université Laval; Centre d'études nordiques

**Les fluctuations du niveau marin dans l'estuaire du Saint-Laurent**

Connaître les variations du niveau dans le Saint-Laurent estuarien de nos jours et durant tout l'Holocène, afin de mieux comprendre l'environnement et les processus.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$25 000

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1989 05*

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## 0306-77

Dixon, G
(519) 885-1211

Department of Biology; University of Waterloo

**Copper & Zinc Impacts on White Sucker Population in Northern Ontario Lakes: Water Quality Criteria**

This study represents an integrated field - laboratory program designed to determine the impacts of metal contamination on the white sucker populations of several lakes in the Manitouwadge district of Ontario. Metal effects will be assessed in terms of reproductive capacity, and survival of larval fish.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$108 900

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1988 05*

## 0306-78

Dodson, J
(418) 656-3289

Université Laval; Département de biologie

**Bioaccumulation de polychlorobiphényles par la faune aquatique de l'estuaire moyen du Saint-Laurent.**

Puisque les sédiments sont une source potentielle importante de PCB, et que les larves et adultes d'éperlan (Osmerus mordax) et de poulamon (Microgadus tomcod) fréquentent le bouchon de turbidité de l'estuaire moyen, l'objectif de l'étude est de vérifier l'hypothèse voulant que la zone de turbidité maximale soit une région contribuant à la contamination de ces poissons et donc une source de la contamination de toute la chaîne alimentaire de l'estuaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Canada, ministère des Pêches et Océans

## 0306-79

Dodson, J
Frenette, J
(418) 656-3289

Université Laval; Département de biologie

**Modélisation des écosystèmes aquatiques: quantification des effets de l'acidité sur l'état d'équilibre des communautés ichtyologiques d'eau fraîche et développement d'un modèle prédictif de gestion.**

Passer en revue les diverses méthodes de détermination de la biomasse ichtyologique absolue des plans d'eau; évaluer la technique d'écho-sondage hydro-acoustique: étude expérimentale et limites d'utilisation; proposer la méthode optimale de détermination de la biomasse absolue.

Financing/*Financement:* Québec, ministère de l'Environnement

$39 971

**START/*DÉBUT***: *1987 12* **END/*FIN***: *1988 09*

## 0306-80

Druehl, L
(604) 291-4292

Simon Fraser University

**Ecology of laminariales in the northeast Pacific**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0306-81

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Evolution littorale et érosion des côtes au Québec.**

Retracer l'évolution des côtes et des niveaux marins anciens et actuels, diagnostiquer le sens de l'évolution et le degré ou le rythme de l'érosion surtout dans l'estuaire et le golfe du Saint-Laurent.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

## 0306-82

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Télédétection de la géomorphologie côtière et des courants marins de surface**

Etablir les performances des capteurs aéroportés et satellitaires pour les types de côtes et de sédiments littoraux ainsi que pour la cartographie des courants marins, des zones de résurgence d'eaux froides et des panaches de rivières.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Canada, ministère des Pêches et Océans

Contrats divers

$80 000

## 0306-83

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Empiétements et degré d'artificialisation des côtes du Québec**

Diagnostiquer par région le degré d'artificialisation des côtes et identifier les zones d'empiétements par type d'empiétements. Développer des techniques d'identification et de suivi par téléinterprétation aéroportée ou satellitaire.

Financing/*Financement:* Fonds institutionnel de recherche

## 0306-84

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Télédétection des algues marines**

Vérifier les possibilités d'application de la télédétection aéroportée et satellitaire pour la localisation, le calcul de biomasse et l'identification des espèces intertidales et infralittorales de macrophytes marins. Etablir une méthode de suivi de la ressource.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

Canada, ministère des Pêches et Océans

$170 000

## 0306-85

Dubois, J
(819) 821-7181

Université de Sherbrooke; Département de géographie

**Télédétection et zonage de sites aquicoles au Québec**

Etablir la performance de capteurs aéroportés et satellitaires pour reconnaître les caractéristiques biophysiques des sites maricoles et pouvoir ainsi trouver des sites potentiels.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$100 000

## 0306-86

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Télé-interprétation de l'habitat du saumon atlantique pour la restauration des rivières.**

Etablir une méthode de télé-interprétation de l'habitat (lit et berges des cours d'eau) du saumon atlantique pour la restauration des rivières du Québec. Cette méthode permet de déterminer la capacité du support en géniteurs et la capacité de production de saumoneaux, ce, à partir de photographies aériennes usuelles au 1: 15000. Rapport disponible.

Financing/*Financement:* Royal Canadian Geographical Society

Sources diverses

$28 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1989 04*

## 0306-87

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Géomorphologie et sédimentologie d'une vallée remodelée à la suite de la rupture d'un barrage.**

Modéliser l'impact de la rupture d'un barrage sur la distribution des sédiments et sur le remaniement de la géomorphologie d'un cours d'eau.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$20 000

**START/*DÉBUT***: *1988* ***END/FIN***: *1990 04*

## 0306-88

Dubois, J-M
(819) 821-7180

Université de Sherbrooke; Département de géographie

**Télé-interprétation de la dynamique sédimentaire littorale et impact de la démolition des quais.**

Divers projets visant à établir rapidement la dynamique sédimentaire littorale autour de quais à partir des couvertures historiques de photographies aériennes, visant à prévoir l'impact sur la côte de la démolition des quais ou de parties de ces quais. Rapport disponible.

Financing/*Financement:* Groupe Conseil DDM Inc.

**START/*DÉBUT***: *1988* ***END/FIN***: *1989 04*

## 0306-89

Dufour, J
(418) 545-5018

Université du Québec à Chicoutimi; Département des sciences humaines

**Situation des parcs marins dans le monde.**

Connaître la situation actuelle du réseau mondial des parcs marins nationaux: inventaire, année de création, localisation, extension, type d'utilisation des ressources, mode de gestion, zonage, principaux stress et traits particuliers. Ce projet se fait en trois étapes: recherches et consultations auprès d'organismes internationaux, étude de cas de quatre sites dans le monde, vérification de la situation du réseau pays par pays.

Financing/*Financement:* Université du Québec à Chicoutimi

Union géographique internationale

$3 800

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 06*

## 0306-90

Dumouchel, A
n. disponible

Eco-Recherches (Canada) Inc.

**Evaluation de différents biotests de toxicité appliqués à des effluents industriels.**

Comparer les approches d'évaluation écotoxicologique québécoise et américaine en les appliquant à dix effluents industriels canadiens ou américains; expliciter les points forts et faibles des deux approches avec une intégration statistique des résultats afin d'optimiser une démarche; formuler subséquemment une clef de choix décisionnels pour les gestionnaires de l'environnement.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnement

$262 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1990 04*

## 0306-91

Dutka, B
(416) 336-4923

Rivers Research Branch; National Water Research Institute; Environment Canada

**Studies on toxicant activity in river sediments and water column**

Study the spatial distribution of toxicants in sediments and the role they play in, insitu microbial processes. Publish french version of revised methods manual. Provide national and international advice on ecotoxicology-microbiology related to water and sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ministry of State for Science and Technology Biotechnology Program

Environment Canada, Parks

**START/*DÉBUT***: *1988 04* ***END/FIN***: *ongoing*

## 0306-92

El-sabh, M
(418) 724-1770
Université du Québec à Rimouski; Département d'océanographie

**Hydrodynamique et variabilité spatio-temporelle du courant de l'estuaire du Saint-Laurent et la partie ouest du golfe Saint-Laurent: Observations et modélisation.**

1. Etudier la dynamique de circulation et le processus de mélange estuarien dans l'estuaire maritime et la partie occidentale du golfe du Saint-laurent en utilisant une approche descriptive et théorique. 2. Mettre ces processus en relation avec la distribution et la dynamique de la communauté planctonique et avec le transport de matières nutritives et polluantes entre l'estuaire et le golfe.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Conseil de recherche en sciences naturelles et en génie
Fondation UQAR
$125 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1989*

## 0306-93

Ernst, W
(902) 426-6141
Environment Canada; Environmental Protection

**Pesticide effluents from pulp and paper industry**

To determine the impact of pulp and paper industry pesticides on aquatic systems.

Financing/*Financement:* Pesticides Program Funding (ECCP)
$14 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0306-94

Ernst, W
(902) 426-6141
Environment Canada; Environmental Protection

**Assessment of organotin contamination in the Atlantic Region**

To provide an assessment of the presence of organotins in the Atlantic Region, and impact on aquatic organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)
$30 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0306-95

Esterby, S
(416) 336-4790
Lakes Research Branch; National Water Research Institute; Environment Canada

**Statistical methods for water quality studies**

Develop spatial/temporal models and methods for censored data (non-detects). Develop methods for modelling spatial components, in monitoring or research data, which will allow the estimation of trends without the variability due to spatial heterogeneity. Application to Great Lakes and regional data, report March 1990. Review and evaluate methods for censored data with application to Niagara River data.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality
$220 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1993 03*

## 0306-96

Evans, M
(306) 975-5310
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Limnology of Great Slave Lake**

To collect preliminary data on zooplankton and benthic community structure in a selected region of Great Slave Lake.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1989* **END/FIN:** *ongoing*

## 0306-97

Evans, M
(306) 975-5310
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Paleolimnology**

To determine whether or not there is good preservation of phytoplankton and zooplankton microfossils in sediment cores collected from a lake in the semi-arid and in the humid regions of Saskatchewan. If preservation is sufficient, to develop a paleolimnology study of two or three lakes in Sask. to show linkages with past climate.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1989* **END/FIN:** *ongoing*

## 0306-98

Evans, M
(306) 975-5310
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Comparative roles of physical events and zooplankton grazers in controlling water clarity in Redberry Lake**

Investigate the relationship between physical events (resuspension) and phytoplankton and microbial standing stocks in Redberry Lake. Investigate the relationship between zooplankton grazers, particulate flux, phytoplankton, and microbial standing stocks.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1989* **END/FIN:** *ongoing*

## 0306-99

Evans, M
(306) 975-5310
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Trophic pathways in a hypereutrophic prairie lake**

Investigate the relationship between phytoplankton/bacterial production, zooplankton grazers, and benthic detritivores. Investigate the factors controlling the sedimentation of organic production to the lake floor. Investigate the factors controlling the resuspension of organic matter and regenerated nutrients.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* **END/*FIN***: *ongoing*

## 0306-100

Evans, R
(705) 748-1273
Environment & Resource Studies; Trent University

**Investigations of bivalve shells as monitors of aquatic contaminants**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$112 350

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0306-101

Ferguson, K
(604) 666-2399
Environment Canada; Conservation and Protection; Environmental Protection

**The export of nutrients from surface coal mines**

To quantify the release of nitrogen and phosphorus from surface coal mines in southeast British Columbia. To develop a predictive model for use at other minesites in Canada. Draft report prepared, final report by March 1988.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Industry

$130 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1988 03*

## 0306-102

Fernbach, E
Guerriere, R
(416) 979-5042
Office of Research and Innovation; Ryerson Polytechnical Institute

**Effect of woodstove catalyst on the nature of PAH content of indoor pollution and stack emissions**

To determine the extent and nature of smoke spillage into indoor air resulting from the normal and sub-normal operation of a woodstove equipped with a catalyst.

Financing/*Financement:* Energy Mines & Resources Canada

$54 473

**START/*DÉBUT***: *1985 11* **END/*FIN***: *1988 10*

## 0306-103

Fitchko, J
(416) 671-2600
Beak Consultants Ltd.

**The Feasibility of Biomass Removal in Shallow Impoundments as a Means of Reducing Nutrient Loading**

1. To determine the potential of biomass harvesting as a means of reducing nutrient loading from the Orangeville Reservoir to the Upper Credit River. 2. To identify nutrient input/output sources on a seasonal basis.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 000

**START/*DÉBUT***: *1985 11* **END/*FIN***: *1987 03*

## 0306-104

Fitchko, J
Andrews, D
(416) 671-2600
IEC Beak Consultants Ltd.

**Availability of Zinc to Benthic Organisms from Sediment Fractions**

To identify sediment chemical fractions serving as a source of zinc to benthic feeders; to assess vertical distribution of these fractions; to compare bioavailability of recent and 'aged' zinc and re-examine MOE data to generate a predictive relationship between zinc in sediment and benthic feeders.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$42 500

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1988 01*

## 0306-105

Fitzgerald, G
(418) 656-2469
Université Laval; Département de biologie

**L'écologie des poissons (gastérosteidae) dans le fleuve Saint-Laurent**

Etudes sur l'écologie, la physiologie et le comportement des poissons des marais salés de la baie de l'Ile Verte.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Conseil de recherche en sciences naturelles et en génie

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1989 05*

## 0306-106

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Deltamethrin in wetlands**

To assess the contamination of sloughs after aerial application of deltamethrin. Report due at year end.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$16 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0306-107

Fox, M
(416) 336-4925

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants in Hamilton Harbour and the Bay of Quinte**

Current status and trends of organic contaminants in Hamilton Harbour. Organic contaminant profiles in Bay of Quinte sediment and suspended sediments compared to Lake Ontario profiles.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 10*

## 0306-108

Fryer, J
(613) 737-6504

University of Ottawa; Anatomy

**Effects of low pH on pituitary hormone secretion and on pituitary-adreno cortical function in the brook trout, salvelinus fontinalis**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$115 362

**START/*DÉBUT*:** *1985 11* **END/FIN:** *1988 10*

## 0306-109

Gangbazo, G
Piché, I
(418) 644-3592

Ministère de l'Environnement; Direction de l'assainissement agricole

**Répercussions environnementales des polluants chimiques des cours d'exercice de bovin sur la qualité des eaux de surface.**

Evaluer les charges saisonnières d'azote et de phosphore des eaux de ruissellement provenant des cours d'exercice de bovin. Evaluer les répercussions environnementales de tels rejets de polluants au moyen de bioessais. Trois cours d'exercice dont deux en sol et une en béton font l'objet de l'étude.En fin d'année 1990, une des trois cours d'exercice sera dotée d'un filtre végétal.

Financing/*Financement:* Québec, ministère de l'Environnement

$60 000

**START/*DÉBUT*:** *1989 10* **END/FIN:** *1992 10*

## 0306-110

Gangbazo, G
Piché, I
(418) 644-3592

Ministère de l'Environnement; Direction de l'assainissement agricole

**Répercussions environnementales des polluants chimiques des tas de fumier sur la qualité des eaux de surface.**

Evaluer les charges saisonnières et annuelles d'azote et de phosphore des eaux de ruissellement provenant des tas de fumier et du bassin versant où ils sont situés. Evaluer les répercussions environnementales de tels rejets de polluants au moyen de bioessais. Trois tas de fumier -dont deux avec montée conventionnelle et un avec évacuateur souterrain- font l'objet de l'étude. Les eaux de ruissellement sont échantillonnées une fois par semaine.

Financing/*Financement:* Québec, ministère de l'Environnement

$60 000

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1991 10*

## 0306-111

Gangbazo, G
Piché, I
(418) 644-3592

Ministère de l'Environnement; Direction de l'assainissement agricole

**Effets des pratiques conventionnelles d'épandage du lisier de porc sur la qualité des eaux.**

Mesurer dans l'eau de ruissellement et dans l'eau de drainage, les concentrations et les charges d'azote et de phosphore résultant des pratiques conventionnelles d'épandage du lisier de porc sur des champs de maïs et des prairies. Aménagement de l8 parcelles de 3m x 15m, la moitié de celles-ci étant des champs de maïs, l'autre moitié étant des prairies. Toutes les parçelles sont drainées par voie souterraine. Lors de chaque événement pluvieux ou fonte, les eaux de ruissellement et de drainage sont échantillonnées séparément. Le prélèvement d'azote et de phosphore par les cultures sera aussi évalué ainsi que l'acculumation de ces éléments dans le sol.

Financing/*Financement:* Québec, ministère de l'Environnement

$236 000

**START/*DÉBUT*:** *1989 01* **END/FIN:** *1992 01*

## 0306-112

Gehr, R
Cailas, M
(514) 398-6861

Université Mc Gill; Département de génie civil

**Statistical analysis of biodegradation, with emphasis on respirometry**

The biodegradation of materials is conveniently measured by respirometry. Automated instruments enable one to acquire closely-spaced time-dependent data. Methods for statistical analysis data are not well developed. The objective of this project is to develop statistical methods to a) rigously determine the parameters of a suitable model to adequately describe the data, and b) to compare data sets obtained under various predetermined conditions. Excellent progress has been made so far, and it appears that rate models, rather than cumulative models, are most appropriate. Comparisons by means of the Jackknife procedure offer the most promise. Also plan to develop an automated respirometer with advanced control features.

Financing/*Financement:* Fonds institutionnel de recherche

Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$31 400

**START/*DÉBUT***: *1983*

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## 0306-113

Gignac, L
(403) 492-5516

Botany Department; University of Alberta

**Ecological tolerances and niche structure of Sphagnum along climatic and pollution gradients**

To determine the accumulation and the effects of reduced sulphur and heavy metal deposition on several Sphagnum species. These pollutants were emitted by mining and smelting operations in the Sudbury, Ontario area and a pulp and paper mill in the Prince Rupert, B.C. area. (This report may be obtained from the CEARC).

Financing/*Financement:* Canadian Environmental Assessment Research Council

$5 000

**START/*DÉBUT***: *1985 05* **END/*FIN***: *1986 03*

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## 0306-114

Glooschenko, W
(416) 336-4786

Lakes Research Branch; National Water Research Institute; Environment Canada

**Role of northern wetlands in global climatic change**

To study the role of northern wetlands in global climatic change and geochemical cycles with emphasis upon the carbon cycle, especially methane.

Financing/*Financement:* Environment Canada, Conservation and Protection

Natural Sciences & Engineering Research Council

$900 000

**START/*DÉBUT***: *1988 09* **END/*FIN***: *1992 09*

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## 0306-115

Glooschenko, W
(416) 336-4786

Lakes Research Branch; National Water Research Institute; Environment Canada

**Atmospheric deposition of contaminants in the Upper Great Lakes**

To determine the feasibility of using vegetation and peat as a biomonitor of atmospheric deposition of organochlorine and metal contaminants in the Lake Superior area and remote northern Canadian sites.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

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## 0306-116

Goldner, M
Wyndman, C
(416) 978-2755

Department of Microbiology; University of Toronto

**Degradation of Organic Contaminants by Anaerobic Bacteria in Lake Ontario Sediments**

1. To determine whether anaerobic bacteria in Lake Ontario sediments can degrade xenobiotics (simple and more complex) using slurry enrichments and sediment/water cores. 2. To correlate breakdown rates with cell density in small cores from various locations on Lake Ontario. 3. To enrich, isolate and characterize bacteria in a degredative consortium. 4. To fit rates and bacterial counts to a model in order to predict, within limits, the fate of specific contaminants in situ.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$94 800

**START/*DÉBUT***: *1985 06*

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## 0306-117

Grant, W
(416) 736-5055

York University; Department of Biology

**Plant Bioassays for the Detection of Environmental Mutagens in an Aquatic Environment**

To develop bioassays with higher plant systems which will address the impact of industrial effluents on the aquatic environment. To use short term higher plant bioassays for the detection of environmental mutagens and to make recommendations on the genetic nature (mutagenbicity) of effluents and selected compounds.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$149 000

**START/*DÉBUT*** *1987 06* **END/*FIN***: *1989 07*

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## 0306-118

Green, C
(604) 291-4292

Simon Fraser University

**Ecology and toxicology of salmonids and freshwater invertebrates**

none available

Financing/*Financement:* National Science & Engineering Research Council

$19 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0306-119

Green, R
(519) 679-6534
Department of Zoology; University of Western Ontario

**Freshwater Clams: Biological Response System to Monitor Nearshore Environment of Lower Great Lakes**

1. To select biological response variables related to molluscs in Lake Erie. 2. To identify analytical methods and contaminants, and evaluate the use of bivalve mollusc shells to generate time-profile environmental impact data. 3. To develop statistical models which predict biological response from environmental quality. 4. To assess the generality of the developed models at several locations and assess genetic components of the biological response.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$73 400
**START/*DÉBUT***: *1984 08* ***END/FIN***: *1987 12*

## 0306-120

Guay, G
(514) 521-4927
Environnement Illimité Inc

**Mise au point d'une méthode d'échantillonnage des aloses savoureuses O+ en dévalaison dans le bief amont de la centrale Rivière-des-Prairies.**

Mettre au point une méthode de capture des jeunes aloses en dévalaison à la centrale Rivière-des-Prairies; mettre au point un filet trappe pour la capture des aloses dans les prises d'eau de puits des turbines de la centrale. Evaluer l'intérêt de l'hydro-acoustique pour étudier le comportement des aloses juvéniles à l'amont de la centrale.

Financing/*Financement:* Hydro-Québec

$10 000
**START/*DÉBUT***: *1987 07* ***END/FIN***: *1987 12*

## 0306-121

Gummer, W
(306) 780-5322
Environment Canada; Inland Waters Directorate

**Dichlofop methyl on wetland communities**

To assess the impact of dichlofop methyl on non-target aquatic organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0306-122

Gummer, W
(306) 780-5322
Environment Canada; Inland Waters Directorate

**Grasshopper spray survey**

To determine the level of pesticides in surface water as a result of grasshopper control programs.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0306-123

Hammond, B
Baddaloo, E
(403) 427-3943
Alberta Environment

**Groundwater contributions to water and nutrient budgets of aquatic systems in Alberta Lakes**

To develop methods and strategies for measuring groundwater in-take flux. In particular, the use of inexpensive, in-situ methods (seepage meters and mini piezometers) are tested. Techniques to assist lake managers in estimating seepage more efficiently are also being developed.

Financing/*Financement:* Alberta Environment

$52 000
**START/*DÉBUT***: *1984* ***END/FIN***: *1987 03*

## 0306-124

Hanna, M
(416) 336-4780
Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of reoxygenation on the recolonization and survival ability of chironomids**

Determine the relationships between benthic invertebrate community structures and contaminants and how these relationships are affected by oxygen levels, and other physico-chemical variables, through a nearshore-offshore transect. Determine the effect of oxygenation on the recolonization by chironomids.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality
**START/*DÉBUT***: *1988 12* ***END/FIN***: *1990 04*

## 0306-125

Hanna, M
(416) 336-4780
Lakes Research Branch; National Water Research Institute; Environment Canada

**Use of mussels as biosensors for contaminants in the St. Lawrence River**

Survey and assess the contamination (contaminant levels, sources, bioavailability and persistence) and health of native mussels in the St. Lawrence River between Lake St. Louis and Tadoussac. Exploit the data obtained from the various indicators of mussel health in order to recommend standardized procedures for establishing a biomonitoring network.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000
**START/*DÉBUT***: *1989 02* ***END/FIN***: *1992 03*

## 0306-126

Harper, P
Cloutier, L
(514) 343-6790

Université de Montréal; Département des sciences biologiques

**Emergence d'insectes dans les lacs soumis à l'acidification.**

Etude de l'émergence d'insectes aquatiques dans trois lacs de la Mauricie, dans le cadre du programme de surveillance continue des lacs soumis aux précipitations acides.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$10 000

## 0306-127

Harper, P
Cloutier, L
(514) 343-6790

Université de Montréal; Département des sciences biologiques

**Drainage agricole et répercussions sur la qualité des milieux aquatiques.**

Evaluation des pratiques d'aménagement des cours d'eau à des fins agricoles par l'étude des répercussions sur la faune benthique.

Financing/*Financement:* Conseil des recherches en argoalimentaire et pêcheries du Québec

Québec, ministère du Loisir, de la Chasse et de la Pêche

$65 000 **END/*FIN***: *1989 12*

## 0306-128

Harper, P
Cloutier, L
(514) 343-6790

Université de Montréal; Département des sciences biologiques

**Drainage agricole et qualité des milieux aquatiques.**

Evaluation des pratiques actuelles d'aménagement des cours d'eau à fins agricoles par l'étude des effets sur la faune benthique.

Financing/*Financement:* Conseil des recherches en agroalimentaire et pêcheries du Québec

Québec, ministère du Loisir, de la Chasse et de la Pêche

$65 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1989 12*

## 0306-129

Harrison, J
(306) 780-6465

Environment Canada; Conservation and Protection; Environmental Protection

**Mercury in the Saskatchewan River system**

To review literature pertaining to mercury in the Saskatchewan River system. To collect sediment and biota from the system within Sask. and to determine if significant mercury deposits lie within the river sediments in Sask.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT***: *1983 06* **END/*FIN***: *1986 03*

## 0306-130

Hartwick, E
(604) 291-4292

Simon Fraser University

**Population processes, environmental factors and community structuring in an estuarine environment**

none available

Financing/*Financement:* National Science & Engineering Research Council

$81 980

**START/*DÉBUT***: *1983 04* **END/*FIN***: *1989 03*

## 0306-131

Harvey, H
(416) 978-3504

Department of Zoology; University of Toronto

**Chemical and Biological Impact: Physiological Stress in Fish of Episodic Acid Rain and Snow Melt**

To determine if the observed perturbations of fish populations in MOE calibrated lakes Crosson and Heney are related to the observed pH depressions in these lakes during episodic acid loading. To determine if the observed physiological stress & mortality of fish at Plastic Lake & Milford Bay occur in other waters susceptible to acidification. Resulting data used in acid loading models relating specific acid loading events to both sources of sulphide and nitrate, and effects on biota.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$40 900

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1987 04*

## 0306-132

Hayes, M
Smith, I
(519) 823-8800

Department of Pathology; Ontario Veterinary College; University of Guelph

**Pathogenesis of Neoplastic Diseases Afflicting Feral Fish**

To investigate the role of pre-neoplastic lesions, in skin and liver of wild fish developing full-blown neoplasia, and the value of serum chemistry in detecting general health related to liver disorders. To include pre-neoplastic lesions in laboratory fish under controlled conditions, in an effort to document their promotion to neoplasia by sediment. To integrate studies into initiation and promotion of pre-neoplastic lesions. Initiating agents may be detectable through genotoxicity assays.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$64 700
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 05*

## 0306-133

Hayes, M
Ferguson, H
(519) 823-8800

Department of Pathology; University of Guelph

**The significance of neoplasia in wild fish populations**

To determine the role of environmental pollutants on the pathogenesis of skin and liver tumors in bottom dwelling fish in Lake Ontario and other polluted regions of the Great Lakes. To determine the relationship between carcinogen susceptibility of affected and non affected fish, with carcinogen susceptibility of terrestrial mammals.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1985*

## 0306-134

Hebert, P
Haffner, D
(519) 253-4232

Great Lakes Institute; University of Windsor

**Biological monitoring of organic contaminants in Lake St. Clair and the St. Clair River**

To develop and verify biomonitoring techniques for freshwater mussels, mayflies and macrophytes.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

$400 000

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1989 05*

## 0306-135

Hecky, R
(204) 983-5000

Fisheries and Oceans Canada

**Mercury limnological survey**

Following reports completed: 1) Evolution of limnological conditions, microbial methylation of mercury and mercury concentrations in fish in reservoirs of northern Manitoba, 2) Limnological data for southern Indian Lake and Notigi reservoirs, 3) Enhancement of mercury bioaccumulation in fish by flooded terrestrial materials in experimental ecosystems, 4) Mercury bioaccumulation in yellow perch in limnocorrals simulating the effects of reservoir formation.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$210 500

**START/*DÉBUT***: *1983 04* ***END/FIN***: *1987 10*

## 0306-136

Herbert, P
(519) 253-4232

Great Lakes Institute; University of Windsor

**Use of Aquatic Vegetation & Invertebrates to Monitor Chlorinated Hydrocarbons in Lakes Huron/Erie**

1. To examine the factors affecting the uptake of selected organic contaminants by clams. 2. To exmaine the usefulness of aquatic vegetation in monitoring selected organic contaminants. 3. To comduct laboratory experiments to calibrate uptake rates (ie the relationship between body burden and water concentrations) to provide a basis for interpreting field data. 4. To assess the concentration of toxic chemicals in major components of Lake St. Clair biota. 5. To refine fate and transport models.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$250 000

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1987 05*

## 0306-137

Hopper, F
Quan, E
(416) 235-5834

Ontario Ministry of Environment; Lab Resources Branch; ITC Section

**The application of ICP/MS for the analysis of metals in surface waters**

To assess the feasibility of using ICP/MS for the analysis of surface water samples on a routine basis.

Financing/*Financement:* Ontario Ministry of Environment

$30 000

**START/*DÉBUT***: *1989 07* ***END/FIN***: *1989 12*

## 0306-138

Ingram, R
(514) 398-6071

Université Mc Gill; Département de météorologie

**Aménagement hydroélectrique des fleuves du nord québéquois: contrôle hydrologique de la productivité biologique et du recrutement chez les poissons anadromes**

Modélisation des processus hydrodynamiques sous couvert de glace marine et des effets sur la production des algues et le recrutement chez les poissons anadromes. Caractéristiques de la circulation (hivernale) côtière due à la pression atmosphérique. Importance de la turbulence hydrodynamique sur le mélange vertical à l'interface eau-glace.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$100 000

## 0306-139

Ingram, R
Lepage, S
(514) 398-6071

Université Mc Gill; Département de météorologie

**Effets environnementaux de l'aménagement hydroélectrique de la rivière La Grande sur les régions côtières de la Baie James**

Décrit le panache de la rivière La Grande sous couvert de glace pour différents débits. Modélisation des effets locaux dus à l'augmentation du débit fluvial dans les régions au nord et au sud de l'embouchure de la rivière La Grande. Effets climatiques. Effets de la glace marine sur le mélange vertical dans le secteur est de la Baie James.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$10 000

## 0306-140

Jenkins, S
(416) 235-5902

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Investigation of Volatiles Loss/Degradation in Fish/Sediment During Storage**

To determine volatile organics loss in prepared fish tissue and sediment, stored at sub-0 (degree) C temperature over various time periods.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$29 000

**START/*DÉBUT***: *1987 07*

## 0306-141

Jerome, J
(416) 336-4922

Rivers Research Branch; National Water Research Institute; Environment Canada

**Optical monitoring of suspended sediment transport in rivers**

To conduct through both experimental and theoretical optical research studies on river sediment transport and real colour displays of natural waters.

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1994 03*

## 0306-142

Johansen, P
(613) 545-6143

Queen's University; Department of Biology

**Acute and Subchronic Pentachlorphenol Exposures on the Growth and Lipid Reserves of Centrarchid Fish**

To determine the effects of pentachlorophenol exposure (chronic and acute) to growth and lipid reserves of centrachid fish over a several week period upon return to uncontaminanted water.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$23 700

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1989 11*

## 0306-143

Johnston, R
(403) 237-1234

BP Canada Inc.

**Field surveys and monitoring of bald eagles in the vicinity of Hope Brook Mine, Newfoundland**

To determine and monitor population size and parameters, distribution, breeding success and other ecological parameters of bald eagles in the vicinity of the Hope Brook Mine, Newfoundland ie. Cinq Cerf Bay, Couteau Bay, Connoire Bay. Period of study 1986-1989. Interim reports available from BP Canada Inc., Calgary (see above).

Financing/*Financement:* Hope Brook Gold Inc.

$20 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1989 07*

## 0306-144

Joshi, S
(416) 336-4573

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sedimentary transport of radionuclides in the Great Lakes with special reference to Lake Ontario**

To investigate the role of suspended sediment in the transport of radionuclides in Lake Ontario; investigate the influence of AECL-derived radionuclides on Ottawa River/St. Lawrence River; characterize and inventory the sedimentary radionuclide reservoir.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0306-145

Kalff, J
Leggett, W
(514) 398-6467

Université McGill; Département de biologie

**Modelling limnological responses to the loading of nutrients and contaminants**

The limnological parameters that are studied include pelagical phyto and zooplankton biomass and size structure, the biomass of submerged macrophytes, abundance, sediment and planktonic bacteria, biomass and size-structure of zoobenthos, growth, biomass, size-structure and species composition of littoral fishes. These parameters are being studied in relation to nutrients, and in addition, are investigating the accumulation of a wide variety of heavy metal and organic contaminants in these limnological communities.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Donner

$385 050

## 0306-146

Kalff, J
Peters, R
(514) 398-6465

Université McGill; Centre de recherche en limnologie

**La modélisation de la réponse des lacs et rivières à l'apport de contaminants; analyse de la génotoxicité de l'eau et des sédiments.**

Examiner l'apport de contaminants (métaux lourds et BPC en particulier) aux lacs et à leurs bassins versants, leur transport, l'association entre la matière organique les sédiments et les contaminants et l'accumulation dans les différents niveaux trophiques. Trois autres recherches portent sur l'analyse de la génotoxicité de l'eau et des sédiments: le développement de relations quantitatives entre structure et activité afin de prédire la bioaccumulation de contaminants, les processus affectant l'acidification des lacs et l'effet de l'acidification sur leurs communautés biologiques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$270 000

## 0306-147

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment technology of oil and gas offshore wastes (PERD project 67201)**

Characterize and evaluate performance and costs of available and practical technologies for the treatment of wastes from the offshore petroleum industry.

Financing/*Financement:* Panel on Energy Research and Development

$340 000

**START/*DÉBUT***: *1982 07* ***END/FIN***: *1986 12*

## 0306-148

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of toxic oil sands wastewater and tailing pond sludges (PERD project 24164)**

Assess and develop treatment technologies to treat toxic oil sand plant process wastewaters.

Financing/*Financement:* Panel on Energy Research and Development

$353 600

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1986 03*

## 0306-149

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Toxicity of Pentachlorophenol to Zooplankton: Fate and Effects**

To examine: 1. Bioconcentration and bioaccumulation of PCPs in Zooplankton using 14C-labelled PCP; 2. Interaction of pH with PCP toxicity and bioavailability; 3. Effect of temperature on PCP toxicity 4. Toxicity tests then may be carried out under field conditions using limnocorrals.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 100

**START/*DÉBUT***: *1986 05*

## 0306-150

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effects of Microencapsulated/EC permethrin and a new generation synthetic pyrethroid SAN 811-I**

To assess the effect of mirco-encapsulation on the toxicity of permethrin to aquatic invertebrates; and to determine EC50 and EC90 for new synthetic pyrethroid SAN 811-I.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$13 500

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0306-151

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effects of microencapsulated & EC permethrin, & a new generation synthetic pyrethroid, SAN 811-1**

To determine effects of synthetic pyrethroids on stream invertebrates.

Financing/*Financement:* Ontario Ministry of Environment, Ontario Pesticides Advisory Committee

$29 200

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0306-152

Kaushik, N
Gordon, A
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Riparian forest plantations for wood production & stream rehabilitation: an integrated approach**

1. To evaluate the growth potential and nitrogen fluxes of selected hybrid poplar and alder plantations along the banks of Washington Creek. 2. To compare fish biomass and production in the planted and control reach of Washington Creek. 3. To compare secondary production in the planted reach and control reach of Washington Creek.

Financing/*Financement:* Ontario Ministry of Natural Resources

$33 725

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0306-153

Keddy, P
(613) 564-3447
University of Ottawa; Biology

**Competition and plant community structure in wetlands**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$281 800

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1991 03*

## 0306-154

Keddy, P
(613) 564-3447
University of Ottawa; Biology

**Management of wetlands on the Canadian shield**

none given

Financing/*Financement:* Canadian Shield Foundation

$15 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 09*

## 0306-155

Keddy, P
(613) 564-3447
University of Ottawa; Biology

**Functional classification of wetland plants and the management of wetland vegetation**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$90 000

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1991 10*

## 0306-156

Khalil, M
(418) 724-1759
Université du Québec à Rimouski; Département d'océanographie

**Contamination des harengs du Saint-Laurent par les organochlorés.**

Etude du degré de contamination de différentes populations de harengs dans différentes frayères dans l'estuaire et le golfe du Saint-Laurent.

Financing/*Financement:* Fonds institutionnel de recherche
Fondation UQAR

$15 000

## 0306-157

Kieley, K
Ernst, W
(902) 426-6141
Environment Canada

**Investigation of the use, environmental occurrence, and effects of tri-n-butyltin compounds**

The objectives of this project are threefold: 1) To determine the use pattern of TBT in the Atlantic Region. 2) To determine the environmental occurrence and possible bioaccumulation of TBT residue. 3) To conduct a series of bioassays to determine effects of chronic exposures on selected marine organisms.

Financing/*Financement:* Pesticides Program Funding

$30 000

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 09*

## 0306-158

Knowles, R
(514) 398-7751
Collège MacDonald; Département de microbiologie

**Nitrogen transformations in terrestrial and aquatic systems.**

Study of the processes of nitrogen fixation, nitrification denitrification and related aspects of the metabolism of hydrogen and methane. Evaluation of sources and sinks of nitrogen oxides (nitrate, nitrite and nitrous oxide) in soils, sediments and water columns of lakes. Effects of alkyl lead and alkyd tin salts on the above processes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
Canada, ministère de l'Agriculture

$119 622

**START/*DÉBUT***: *1988* ***END/FIN***: *1989 04*

## 0306-159

Kushner, D
(613) 564-2437
University of Ottawa; Biology

**Micro-organisms that live in extreme environments; mechanisms of microbial resistance to toxic substances**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$555 217

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1991 03*

## 0306-160

Kussat, R
(604) 666-3601
Environment Canada; Environmental Protection

**Survey of chlorophenols and dioxins in the Fraser River and Vancouver Island**

To provide an assessment of the impact of chlorophenols on organisms in British Columbia

Financing/*Financement:* Pesticides Program Funding (ECCP)

$36 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0306-161

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Concentration of chlorophenols in starry flounders**

To determine the concentration of chlorophenols in starry flounders in British Columbia.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$28 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0306-162

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Assessment of organotin contamination in the British Columbia environment**

To provide an assessment of the levels of organotins in sediment organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0306-163

Law, F
(604) 291-4292

Simon Fraser University

**Studies on the bioavailabilities and toxicokinetics of pyrene carbazole in trout**

none available

Financing/*Financement:* National Science & Engineering Research Council

$30 720

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 03*

## 0306-164

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pesticides on algae and zooplankton**

To assess the impact of pesticides on algae and zooplankton.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0306-165

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Effects of pesticides on algae**

To develop a mechanism to assess the presence of low pesticide levels in water.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0306-166

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Effects of pyrethroids on zooplankton**

To determine the sublethal effects of pyrethroids on aquatic systems.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0306-167

Lee, B
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Analysis of phthalic acid and esters (PAE's) in sediment extracts**

To develop an HPLC-ECD method for the analysis of PAE's in sediment extracts. The method should perform the clean-up, fractionation and quantitation of the sediment PAE's simultaneously. The method should be simpler, less time consuming and reduce background contamination problems.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 04*

## 0306-168

Lee, H
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Identification and determination of toxic organics in pulp and paper industry effluents**

Develop method for the determination of selected resin acids found in pulp and paper effluents. Identify the toxic or major chlorinated fatty acids and neutrals in effluents by GC-MSD and/or GC-MS-MS techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *ongoing*

## 0306-169

Legge, A
(403) 220-5271
Kananaskis Centre for Environmental Research; University of Calgary

**Alberta Government/Industry. Acid deposition research program, biophysical aspects**

1. An initial assessment of the potential impact of acid-forming gases on Alberta's environment, including local & regional air quality assessments & agricultural crops & soil evaluation; 2. An inventory of sulphur oxide & nitrogen oxide emissions in Alberta; 3. A world literature review in the biological sciences on the effects of acid deposition on vegetation, soils & surface & ground waters, and then placing these in an Alberta context.

Financing/*Financement:* Alberta Environment
Canadian Petroleum Association
Energy Resources Conservation Board
Utilities Group, Alberta
$5 309 758

**START/*DÉBUT***: *1985 02* **END/*FIN***: *1988 07*

## 0306-170

Lepage, S
Ingram, R
(514) 398-4404
Université McGill; Département de météorologie

**Seasonality of river plume dynamics in a subarctic inland sea (projet de doctorat)**

L'objectif de ce projet est la compréhension de la dynamique côtière et des facteurs saisonniers qui influencent la circulation dans le sud-est de la Baie d'Hudson, à proximité du panache de la Grande Rivière de la Baleine. Ces facteurs sont: l'écoulement d'eau douce, la présence de glace en hiver, le vent, la pression barométrique, etc. Une meilleure compréhension de l'action combinée de ces différents phénomènes est nécessaire afin d'évaluer les impacts potentiels de la modification du régime hydrologique en milieu subarctique.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
Canada, ministère des Affaires indiennes et du Nord
Fonds pour la formation des chercheurs et l'aide à la recherche
$85 000

**END/*FIN***: *1988 12*

## 0306-171

Lesack, L
(306) 975-5647
Hydrology Division; National Hydrology Research Institute; Environment Canada

**Mackenzie delta lakes**

To analyse existing NHRI and FWI databases concerning lake hydrology and limnology. To determine the chemical and nutrient balances for typical delta lakes. To conduct limited field work as required to fill in data gaps as determined from above analysis.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* **END/*FIN***: *1991*

## 0306-172

Liu, D
(416) 336-4576
Rivers Research Branch; National Water Research Institute; Environment Canada

**Photo and biological degradations of contaminants in the Athabasca River system**

To systematically investigate the photo and biological degradations of selected priority contaminants (PAHs/PANHs) in the Athabasca River systems, with the emphasis on degradation/transformation mechanism, metabolites and pathways.

Financing/*Financement:* Environment Canada, Conservation and Protection
$350 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1992 03*

## 0306-173

Lortie, G
(418) 656-2898
Université Laval; Centre d'études nordiques

**Biostratigraphie et paléoécologie des lacs nordiques et alpins (Québec).**

Le projet concerne la paléoécologie et la biostratigraphie des diatomées dans les séquences post-glaciaires de lacs acides localisés le long d'un large gradient latitudinal s'étalant depuis Poste-de-la-Baleine juqu'aux hauts plateaux de la Gaspésie (Québec). L'étude des séquences lacustres a pour objectif d'établir et de comparer la biostratigraphie des diatomées depuis le post-glaciaire, de mettre en évidence l'évolution des flores en fonction des oscillations climatiques, de confirmer la valeur biogéographique des taxons et assemblages supposés circumpolaires, ainsi que les caractéristiques physico-chimiques de leurs milieux. Un volet du projet concerne les diatomées lacustres sub-actuelles du Québec. La région présentement étudiée concerne le Nouveau-Québec.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
$42 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

## 0306-174

Lum, K
(416) 336-4617
Rivers Research Branch; National Water Research Institute; Environment Canada

**Assessment and modelling of contaminants with special reference to the Athabasca River**

Determine the significance of abiotic factors (particle composition, speciation and surface characteristics) in influencing contaminant bioavailability, transport and fluxes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1993 03*

## 0306-175

Mackay, D
(416) 978-4019

University of Toronto; Institute for Environmental Studies

**Biosorption, bioaccumulation and food chain transfer of organic chemicals**

To review state-of-the-art research with respect to biosorption and bioaccumulation in order to enhance predictive food chain modelling.

Financing/*Financement:* Ontario Ministry of Environment

$17 500

## 0306-176

Mackay, D
(416) 978-4019

Institute for Environmental Studies; University of Toronto

**Studies of environmental fate, effects and modelling of contaminants in the environment**

To gather and correlate physical-chemical data, measure transport rates in the environment and assemble mathematical models of contaminant behaviour as they migrate between air, water, soils and sediments.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

Natural Sciences & Engineering Research Council

**START/*DÉBUT*:** *1972 00*

## 0306-177

Mackay, D
(416) 978-4019

Department of Chemical Engineering; University of Toronto

**Predictive organic contaminant structure-property-toxic relationships for aquatic organisms**

To develop methods to correlate organic contaminant structure to its physical properties, organism uptake rates and toxic effects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$57 000

**START/*DÉBUT*:** *1984 07* **END/*FIN*:** *1986 05*

## 0306-178

Mackay, D
Diamond, M
(416) 978-4019

Institute for Environmental Studies; University of Toronto

**Application of the Fugacity Model to Predicting the Behaviour of Arsenic in the Environment**

To develop a model (suitable for use by Ministry staff) which can be used to predict the dynamics and fate of inorganic substances in aquatic systems. The model will be initially applied to predict the behaviour of arsenic in the Moira River system in Eastern Ontario and to track its recovery from decreasing primary inputs of arsenic. The model will incorporate inputs of arsenic from contaminated sediments, and as such, will quantify the flux of aresenic at the sediment/water interface.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$40 900

**START/*DÉBUT*:** *1986 05*

## 0306-179

Mackay, W
(403) 492-2538

University of Alberta; Dept. of Zoology

**Growth of perch in Alberta lakes**

To identify environmental parameters which control growth of perch. Factors examined include latitude, surface area, mean depth, shoreline development, proportion of surface area as littoral zone.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

Natural Sciences & Engineering Research Council

## 0306-180

MacKay, W
(403) 492-2538

Department of Zoology; University of Alberta

**Role of benthic invertebrates in nutrient cycling in lakes (water pollution - effects)**

To determine the importance of bottom dwelling invertebrates in phosphorus & nitrogen cycling in lakes.

Financing/*Financement:* Alberta Environment Research Trust

$23 096 **END/*FIN*:** *1987 05*

## 0306-181

Mackie, G
(519) 824-4120

University of Guelph; Dept. of Zoology

**Ecology and control of the biofouler, Dreissena polymorpha, (Bivalvia: Dreissenidae), new to the Great Lakes**

To determine life history characteristics of the Lake St. Clair population of Dreissena polymorpha. To determine the age and growth rate of individuals and of the population in Lake St. Clair and the extent of its distribution and growth rates in the Great Lakes. To determine the potential impact of the zebra mussel on native species of unionid mussels in Lake St. Clair and some of its major tributaries.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$86 500

**START/*DÉBUT*:** *1989 05* **END/*FIN*:** *1992 04*

## 0306-182

Mackie, G
(519) 824-4120
Department of Zoology; University of Guelph

**Factors influencing Trace Metal Levels in Zooplankton in Ontario Lakes**

To determine if the concentrations in zooplankton of a variety of metals may be predicted from proximity to a known source, the pH, Ca or organic carbon levels of the lakewaters, the Ca content of the plankton and/or the composition of the zooplankton communities.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$30 000

**START/*DÉBUT***: *1986 10* **END/*FIN***: *1987 10*

## 0306-183

Magnan, P
Couture, R
(819) 376-5053
Université du Québec à Trois-Rivières; Département de chimie biologie

**Etude de la vitesse de nage du poulamon atlantique (Microdadus tomcod) en relation avec les travaux de la traversée du fleuve Saint-Laurent par la ligne Radisson-Nicolet-Des-Cantons.**

Evaluer l'impact des travaux de la traversée du fleuve Saint-Laurent par la ligne Radisson-Nicolet-Des-Cantons sur le poulamon atlantique.

Financing/*Financement:* Hydro-Québec

$30 000

**START/*DÉBUT***: *1987 12* **END/*FIN***: *1988 05*

## 0306-184

Magnan, P
Couture, R
(819) 376-5053
Université du Québec à Trois-Rivières; Département de chimie biologie

**Effets de l'acidité de l'eau sur la croissance de la perchaude (Perca flavescens) du Témiscamingue.**

Evaluer l'effet des précipitations acides sur la croissance de la perchaude des lacs du Témiscamingue.

Financing/*Financement:* Québec, ministère de l'Environnement

$20 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 03*

## 0306-185

Maguire, R
(416) 336-4776
Rivers Research Branch; National Water Research Institute; Environment Canada

**Fate of pesticides and industrial chemicals in the Yamaska River, Quebec**

To finish analyses of water, sediment and biota from the Yamaska River for dyes, chlorinated chemicals and pesticides. To start work on identification of PAHs and related chemicals in effluents from tar sands operations on the Athabasca River, Alberta. Cross-reference with 83013 (J. Metcalfe) and 83015 (K. Day).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$500 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1990 03*

## 0306-186

Maguire, R
(416) 336-4776
Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pesticides in fish from Yamaska River, Quebec**

To develop a sensitive technique for measuring pesticides in fish.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$23 100

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

## 0306-187

Maly, E
(514) 848-3390
Université Concordia; Département de biologie

**Factors affecting incidence of calanoid codepod populations**

Examination of biological, chemical, physical factors that affect distribution and abundance of zooplankton species.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$63 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0306-188

Mauviel, A
(418) 724-1749
Université du Québec à Rimouski; Département d'océanographie

**Bioturbation dans le milieu interdidal de l'estuaire maritime du Saint-Laurent.**

Faire la part entre la bioirrigation et la bioturbation du benthos dans les sédiments du littoral.

Financing/*Financement:* Fonds institutionnel de recherche

$5 000

## 0306-189

Mauviel, A
(418) 724-1749
Université du Québec à Rimouski; Département d'océanographie

**Bioturbation dans le Grand Bassin du fjord du Saguenay**

Comparer les taux de bioturbation avec les apports de matières organiques dans les sédiments superficiels du bassin profond du Saguenay.

Financing/*Financement:* Fonds institutionnel de recherche

$13 300

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## 0306-190

Mayer, T
(416) 336-4506

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of iron and steel mill effluents on reduction of the P-availability in Hamilton Harbour**

Determine whether industrial effluent can be used to remove P from water column, thus determine whether this effluent is beneficial or detrimental to Hamilton Harbour.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

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## 0306-191

McQueen, D
(416) 667-2526

Department of Biology; York University

**Bioaccumulation of Mercury by Yellow Perch**

To develop a model for the bioaccumulation of mercury in young-of-the-year yellow perch. The model will be used to explain inter-lake variation in mercury body burdens.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$29 000

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 02*

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## 0306-192

Metcalf, J
(416) 336-4685

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Organisms as indicator of ecosystem health**

To develop a sensitive technique for measuring presence of pesticides in the environment.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 200

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

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## 0306-193

Metcalfe, C
(705) 748-1272

ERS Program/Biology; Trent University

**An Ecosystem Approach to Monitoring of Organic Aquatic Contaminants in the Muskoka-Haliburton Region**

To investigate the sources and fate of persistent organic contaminants in lakes within the Muskoka/Haliburton/Renfrew area, and to assess whether these compounds are a long-term environmental hazard.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$245 500

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1989 03*

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## 0306-194

Metcalfe, J
(416) 336-4685

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biomonitoring techniques for contaminants in rivers**

Complete research on the bioaccumulation and ecological/physiological effects of pesticides in aquatic organisms from the Yamaska River, Quebec. Continue research on freshwater mussels as biomonitors in the upper St. Lawrence River. Initiate research on the impact of tar sands operations on fish in the Athabasca River, Alberta.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1991 03*

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## 0306-195

Molot, L
(416) 362-2457

Booth Aquatic Research Group

**Prevention and Mitigation of Nuisance Blue-Green Algal Blooms in Eutrophic Waters in Ontario**

To enchance the recreational value of eutrophic lakes and impoundments by preventing dominance of phytoplankton communities by nuisance blue-green algae (cyanophyta).

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$18 900

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1987 03*

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## 0306-196

Molot, L
(416) 425-3578

Molot Environmental Services

**Control of Blue-Green Algal in Eutrophic Waters Via Enhancement of Aerobic Microbial Respiration**

To enhance the recreational value of eutrophic (nutrient-rich) waters by preventing dominance of phytoplankton communities by nuisance blue-green algae. The proposed remedy is enhancement of aerobic microbial respiration via optimization of aeration strategy.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$27 400

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1989 05*

## 0306-197

Moores, R
(709) 772-4087

Environment Canada; Conservation & Protection

**Strategy for chronic and acute toxicity testing**

Develop a strategy and recommendation for chronic and acute toxicity testing related to offshore oil development using Daphnia megna and stickleback. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1987 10* **END/FIN**: *1988 04*

## 0306-198

Moores, R
(709) 772-4087

Environment Canada; Conservation & Protection

**Environmental effects monitoring program**

Develop an effluent monitoring methodology in support of environmental effects monitoring program related to chronic hydrocarbon discharge to the marine environment. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1987 10* **END/FIN**: *1988 04*

## 0306-199

Morin, A
(613) 564-2336

University of Ottawa; Biology

**Ecologie et controle des populations de mouches noires; modélisation de la productivité des organismes aquatiques**

none given

Financing/*Financement:* University of Ottawa

$7 000

**START/*DÉBUT***: *1989 01* **END/FIN**: *1989 04*

## 0306-200

Morin, A
(613) 564-2336

University of Ottawa; Biology

**Primary productivity and grazer production in streams**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$75 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1992 03*

## 0306-201

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants - water/air**

Assessment of the feasibility of habitat creation at confined disposal facilities as remediation of contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1992 03*

## 0306-202

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Behaviour of in-situ sediment contaminants**

Evaluation of physio-chemical properties of sediments and their effects on the distribution and mobility of contaminants in aquatic ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$700 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1992 03*

## 0306-203

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment toxicity and treatment methods in Hamilton Harbour**

To evaluate sediment toxicity and methods of reducing sediment toxicity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Ontario Ministry of Environment

$500 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1990 10*

## 0306-204

Naldrett, D
(613) 545-6030

Geography; Queen's University

**Microfaunal paleoenvironments: Cambridge Fiords, Baffin Island**

unavailable

Financing/*Financement:* Queen's University

$2 321

**START/*DÉBUT***: *1987 11* **END/FIN**: *1988 10*

## 0306-205

Neil, J
(416) 487-8874
Limnos Limited

**To map the distribution and determine the species composition and biomass of macrophytes in the Bay of Quinte**

Duplicate historic Project Quinte transcets measuring macrophyte beds. Use LORAN navigation to determine precise location and an echo sounder to produce an accurate measurement of plant density and plant height within the water column. Develop new transcets to better identify macrophyte distribution. Compute macrophute biomass and percent contribution of each species. Compare sampling methods as to cost, accuracy, benefits and processes.

Financing/*Financement:* Ontario Ministry of Environment
$20 000
**START/*DÉBUT***: *1988 04*

## 0306-206

Nicholls, K
(416) 235-5810
Ontario Ministry of Environment; Water Resources Branch

**Inferred pH/alkalinity history of acid sensitive lakes using algal remains ('fossil') preserved in lake sediments**

To determine the rate of change of alkalinity/pH in selected lakes over the past 100 years.

Financing/*Financement:* Ontario Ministry of Environment
$90 000

## 0306-207

Nicholls, K
Vandermeulen, H
(416) 235-5810
Ontario Ministry of Environment; Water Resources Branch

**Control of blue-green algae problems in Southern Ontario lakes and reservoirs**

To evaluate methods of eliminating blue-green algal blooms using biomanipulation, physical and chemical treatment of whole lakes and reservoirs.

Financing/*Financement:* Ontario Ministry of Environment
$390 000
**START/*DÉBUT***: *1987 01*

## 0306-208

Nordin, R
(604) 387-9517
British Columbia Ministry of Environment & Parks

**Wood Lake sediment treatment study**

Investigate the potential of using iron (ferric chloride in the form of waste pickling liquor) to immobilize phosphorus in deep lake sediments. A significant portion of the phosphorus input to the lake originates with internal loading.

Financing/*Financement:* British Columbia Ministry of Environment & Parks
Okanagan Water Quality Control Program
$65 000
**START/*DÉBUT***: *1986*

## 0306-209

Nriagu, J
(416) 336-4784
Lakes Research Branch; National Water Research Institute; Environment Canada

**Trace metals in the lower Great Lakes: atmospheric influence**

To evaluate the role of atmospheric inputs and the influence of nutrient elements on the baseline concentrations of trace metals in waters of the lower Great Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection
Great Lakes Water Quality
$450 000
**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0306-210

Orchard, I
(416) 973-1089
Environment Canada; Conservation & Protection; Ontario Region

**Study of open water dredging disposal**

Use underwater camera to assess the effectiveness of capping dredged material disposed in open water.

Financing/*Financement:* Environment Canada, Conservation & Protection
$8 000
**START/*DÉBUT***: *1982 05* **END/*FIN***: *1986 09*

## 0306-211

Orchard, I
(416) 973-1089
Environment Canada; Conservation & Protection; Ontario Region

**Sampling protocols**

To develop technical guide for sampling and preserving sediment.

Financing/*Financement:* Environment Canada, Conservation & Protection
Ontario Ministry of Environment
$18 000
**START/*DÉBUT***: *1985 05* **END/*FIN***: *1987 09*

## 0306-212

Orchard, I
(416) 973-1089
Environment Canada; Conservation & Protection; Ontario Region

**Bioassessment**

Wheatley Harbour. A joint DOE/MOE study was initiated in 1986 and continued into the 1987 field season focusing on the biological implications of contaminated sediments. Benthic enumeration studies were undertaken as well as lethal

and sub-lethal effects. A report as part of the Remedial Action Plan for Wheatley Harbour will be produced.

Financing/*Financement:* Environment Canada, Conservation & Protection

$25 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1988 06*

## 0306-213

Osborne, J
(709) 772-4047

Environment Canada; Conservation & Protection

**Acute and chronic toxicity of discharged oily cutting from exploratory oil well drilling**

Determine potential impact of discharges. Published in Proceedings of Conference on Offshore Waste 88, publisher Elsevier.

Financing/*Financement:* Northern Oil & Gas Action Program

$30 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1986 00*

## 0306-214

Osborne, J
(709) 772-5488

Environment Canada; Conservation & Protection

**Treatment technology for produced water at offshore oil production sites**

Develop new and/or improved technology to treat waste water - reduce oil discharges.

Financing/*Financement:* Panel on Energy Research & Development

$170 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1990 08*

## 0306-215

Ozburn, G
(807) 343-8467

Lakehead University; Dept. of Biology

**Provision of rainbow trout and daphnia toxicity testing of effluents from Northwestern Ontario**

To perform toxicity test analyses on effluent samples. The tests performed will be daphnia and trout acute lethality measurements. A final report will be submitted March 31, 1989.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1989 03*

## 0306-216

Packman, G
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea ocean dumpsite selection**

1) To select a preferred ocean dumpsite for scrap metal. 2) To carry out the pre-dump portion of a program to monitor the effects of scrap metal disposal.

Financing/*Financement:* Northern Oil and Gas Action Program

Ocean Dumping Control Act Research Fund

$152 500

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1987 03*

## 0306-217

Packman, G
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Environmental studies design criteria**

1) To define natural variability of sediment physical/chemical parameters in the Beaufort Sea. 2) To determine optimum number of sample replicates for effective monitoring programs. 3) To test strategies and parameters for inclusion in monitoring guidelines.

Financing/*Financement:* Panel on Energy Research and Development

$154 300

**START/*DÉBUT*:** *1984 06* **END/FIN:** *1987 03*

## 0306-218

Painter, D
(416) 336-4789

Lakes Research Branch; National Water Research Institute; Environment Canada

**Macrophyte abundance in Great Lakes**

In several AOCs, aquatic plants affect the attainment of beneficial uses. Remedial options under discussion would increase aquatic plant abundance thereby affecting recreational boating negatively but positively affecting fish habitat. Information will be obtained, gaps identified to assist the RAP.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$355 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0306-219

Pellerin-Massicotte, J
(418) 724-1589

Université du Québec à Rimouski; Département d'océanographie

**Evaluation de la qualité de l'estuaire du Saint-Laurent à l'aide de bivalves marins. Etudes spatiales.**

Le projet vise à développer et à valider pour des écosystèmes naturels, des indicateurs de stress environnementaux et de stress dus à la pollution, par l'évaluation d'indices de croissance d'une espèce de bivalve marine (Mya) abondante dans l'estuaire du Saint-Laurent. Les indicateurs développés pourront être ultérieurement utilisés pour des bivalves d'eau douce. Les résultats attendus présentent l'intérêt d'être valables, simples et intégrables à une démarche de suivi du milieu aquatique par le Ministère. Le projet

est peu dispendieux puisque certaines parties sont défrayées par CRSNG, FCAR, UQAR, et Environnement Canada. C'est donc un outil prometteur d'indicateur biologique synthétique permettant de dégager un bilan approfondi de la qualité de l'environnement aquatique.

Financing/*Financement:* Québec, ministère de l'Environnement

$24 290

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1989 03*

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## 0306-220

Pelletier, E
(418) 724-1764

Université du Québec; INRS-océanologie

**Biodisponibilité et toxicité des composés organométalliques en milieu marin.**

1. Déterminer la spéciation du mercure et du méthylmercure dans les sédiments du fjord du Saguenay. 2. Déterminer la biodisponibilité de plusieurs complexes du mercure chez les organismes benthiques. 3. Déterminer la toxicité sous-léthale de ces composés et les mécanismes de détoxification.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$42 000

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1989 05*

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## 0306-221

Pelletier, E
(418) 724-1764

Université du Québec; INRS-océanologie

**Etude des effets du pétrole dispersé sous la glace en milieu marin.**

1. Etablir un bilan chimique du vieillissement du pétrole dispersé en eaux marines très froides et sous la glace. 2. Evaluer le choc toxique subi par l'écosystème pélagique lors d'une dispersion chimique en hiver. 3. Evaluer la capacité de récupération de l'écosystème au printemps.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$270 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 11*

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## 0306-222

Perry, S
(613) 564-4272

University of Ottawa; Biology

**Metabolic consequences of environmental acidification in fish**

none given

Financing/*Financement:* Ontario Ministry of Natural Resources

World Wildlife Fund

$101 200

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 12*

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## 0306-223

Philbert, F
(416) 336-4663

Environment Canada; Inland Waters Directorate; Water Quality Branch, Ontario Region

**Pesticide distribution in the lower Ottawa River**

To determine the distribution of pesticides in the lower Ottawa River.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

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## 0306-224

Pick, F
(613) 564-6856

University of Ottawa; Biology

**Freshwater pico-cyanobacteria: distribution of pigment groups, contribution to primary production and microbial food chains**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$75 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

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## 0306-225

Pick, F
(613) 564-6856

University of Ottawa; Biology

**Response of freshwater picoplankton to changes in nutrient loading and organic contaminants**

none given

Financing/*Financement:* Environment Canada, Conservation & Protection

$16 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 03*

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## 0306-226

Pinel-Alloul, B
(514) 343-6784

Université de Montréal; Département des sciences biologiques

**Stratégies spatio-temporelles et trophodynamisme dans les écosystèmes aquatiques des lacs du Bouclier canadien.**

Décrire et prédire les réponses fonctionnelles (production) et numériques (abondance, biomasse) des compartiments bactérioplanctoniques, phytoplanctoniques et zooplanctoniques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 04*

## 0306-227

Pinel-Alloul, B
(514) 343-6784
Université de Montréal; Département des sciences biologiques

**Hétérogénéité spatiale dans les écosystèmes aquatiques. Etude concernant les techniques de mesure des patrons de répartition spatiale.**

Comparer les techniques existantes de mesure des patrons de répartition spatiale, puis, mettre au point de nouvelles méthodes lorsque nécessaire; employer ces méthodes pour étudier les facteurs qui génèrent les patrons de répartition spatiale chez différents types d'organismes aquatiques (bactéries, phytoplancton, zooplancton, mollusques, insectes) ; enfin, étudier l'évolution temporelle des patrons de répartition spatiale au cours du temps, dans certains milieux aquatiques (ruisseau, lac, lagune marine). Cette recherche résultera en la formulation de théories écologiques plus valides, donc en de meilleures applications de ces théories à des écosystèmes concrets;elle permettra aussi de réaliser l'échantillonnage des populations naturelles de façon plus précise et plus efficace.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$117 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1990 06*

## 0306-228

Pinel-Alloul, B
(514) 343-6190
Université de Montréal; Département des sciences biologiques

**Développement de biotests de toxicité chronique mesurant l'inhibition des réponses métaboliques du zooplancton des milieux naturels.**

Le projet vise à tester l'applicabilité de paramètres métaboliques comme la concentration en ATP dans le zooplancton afin de l'employer ultérieurement pour des biotests de toxicité sublétale. Le projet débutera par un développement méthodologique en laboratoire en vue de proposer un protocole expérimental de bio-tests reproductibles, simples, rapides et peu coûteux. L'applicabilité de cet indicateur de stress sera par la suite vérifié dans le milieu naturel (vierge et pollué) sur d'autres organismes zooplanctoniques. Advenant le succès de ce projet, les organismes responsables disposeront d'un outil plus sensible de détection des stress leur permettant de mieux préciser les critères de qualité de l'eau protégeant l'écosystème aquatique.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, Approvisionnement et Services, Environnement

$73 170

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1989 12*

## 0306-229

Pinel-Alloul, B
(514) 343-6784
Université de Montréal; Département des sciences biologiques

**Ecotoxicology of sediment associated pollutants**

L'objectif général de notre projet de recherche est d'analyser la variabilité chimique et écotoxicologique des polluants associés aux sédiments naturels dans la région du lac Saint-Louis. Les composantes physico-chimiques des sédiments (granulométrie) et de l'eau (pH, oxygène dissous, conductivité, éléments nutritifs), ainsi que les composantes toxiques (polluants organiques et inorganiques) des élutriats de sédiments serviront à caractériser les milieux récepteurs. La variabilité écotoxicologique potentielle des milieux sera évaluée en estimant les réponses toxicologiques des organismes et des communautés planctoniques de trois niveaux trophiques et représentatives du milieu.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$91 300

## 0306-230

Pinel-Alloul, B
Methot, G
(514) 343-6190
Université de Montréal; Centre de recherches écologiques de Montréal

**Analyse des communautés biologiques de 54 lacs du Québec, en référence à la morphométrie des lacs et aux niveaux d'acidification naturelle et anthropogène.**

Cette étude a pour but d'analyser les répercussions de l'acidification des milieux sur des composantes biologiques. Nous produirons deux études complémentaires portant plus spécifiquement sur les communautés planctoniques (zooplancton-phytoplancton) dont la structure taxonomique et la répartition des espèces dominantes seront analysées en référence aux facteurs du milieu liés à la morphométrie des lacs et aux niveaux d'acidification naturelle et anthropogène. Ces études seront rédigées sous forme de deux articles scientifiques en collaboration avec les responsables du projet à Pêches et Océans Canada.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$7 994

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1987 12*

## 0306-231

Pinel-Alloul, B
Methot, G
(514) 343-6190
Université de Montréal; Centre de recherches écologiques de Montréal

**Etude préliminaire d'impact sur le projet de dragage de sable dans les secteurs de Sandy Hook et de l'île de l'Est aux Iles de la Madeleine, Québec.**

L'étude d'impact produite par le CREM a pour but 1) de décrire les caractéristiques physiques et biologiques de la zone à draguer et de la zone d'influence 2) d'identifier et d'évaluer l'impact d'un tel projet sur les diverses composantes décrites et enfin 3) de suggérer des mesures de mitigation susceptibles d'atténuer les impacts identifiés.

Financing/*Financement:* Silice Madeleine Inc

$90 000

## 0306-232

Pitblado, J
(705) 675-1151

Laurentian University; Geography

**Lake water quality monitoring based on remotely sensed data, phase II**

Long term aim: To aid in the establishment of a lake water quality monitoring program for Ontario based on the principles and techniques of remote sensing. Immediate objective: To characterize/ map/classify the lakes (in terms of general trophic state as well as discriminating between acidic and non-acidic lakes) of three major areas on the Precambrian Shield using Landsat TM data. Report is not available at present.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$123 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1990 10*

## 0306-233

Planas, D
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Etude des facteurs biotiques et abiotiques qui influencent la production primaire.**

Le but de cette recherche est de déterminer les facteurs influençant la production primaire en milieu naturel et pertubé afin de pouvoir prédire l'évolution des écosystèmes lors des pertubations anth?me des communautés périphytiques lotiques du bouclier canadien. Particulièrement les modalités des mécanismes permettant une augmentation de la production primaire en milieu acide.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$103 862 **END/*FIN***: *1988 03*

## 0306-234

Planas, D
(514) 282-4118

Université du Québec à Montréal, Département des sciences biologiques

**Interactions des différents niveaux trophiques des systèmes lotiques en milieu naturel et perturbé par acidification.**

Le but de cette recherche est d'étudier les effets indirects des précipitations acides découlant de la modification de l'organisation du réseau trophique. Les objectifs sont d'étudier d'une part, comment l'augmentation de la biomasse et de la production périphytique des milieux lotiques acidifiés entraîne la modification de la communauté benthique. D'autre part, les ressources benthiques potentiellement disponibles dans ce milieu pertubé sont utilisables par les poissons.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Canadian National Sportmen's Fund

$88 400

**START/*DÉBUT***: *1983* ***END/FIN***: *1987*

## 0306-235

Powles, P
(705) 748-1316

Dept. of Biology; Trent University

**Trophic interactions of perch and zooplankton in an acid lake**

none given

Financing/*Financement:* Ontario Ministry of Natural Resources

$9 750

**START/*DÉBUT***: *1988 05*

## 0306-236

Prepas, E
(403) 492-3308

University of Alberta; Dept. of Zoology

**Use of liquid oxygen to aerate deep prairie lakes**

Maintain dissolved oxygen concentrations above 2 mg/l throughout the water column of a deep (34 m) partially meromictic lake basin. Report prepared March 1989 for Alberta Fish & Wildlife Division, manuscript in preparation. Four graduate students working on this project.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

Environment Canada, Conservation & Protection

Alberta Environment

Alberta Fish & Wildlife Division

$124 500

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1998 03*

## 0306-237

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Use of lime to control algal growth and overwintering oxygen levels in Figure 8 Lake, Alberta**

To use lime to improve water quality and fisheries habitat in Figure 8 Lake, Alberta, reports prepared for 1985, 1986, 1987 and 1988. Manuscript accepted with revisions in Environmental Science and Technology.

Financing/*Financement:* Alberta Environment

$47 500

**START/*DÉBUT***: *1985 05*

## 0306-238

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Factors controlling aquatic weeds in prairie lakes and rivers**

To evaluate effects of nitrogen, and phosphorus concentrations and current speed on macrophyte growth in rivers. Reports prepared for: Recreation, Parks and Wildlife. January 1987, the University March 1988, Environment Canada December 1987, Donner Foundation January 1989; two pa-

pers published in primary literature, three submitted to primary literature.

Financing/*Financement:* Recreation Parks and Wildlife Foundation (Alberta)

University of Alberta

Environment Canada, Conservation & Protection

Alberta Environment

Donner Canadian Foundation

$214 800

**START/*DÉBUT*:** *1986 01* **END/*FIN*:** *1991 03*

## 0306-239

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Sediments as a phosphorus and nitrogen source in deep prairie lakes**

To produce an approach to estimate the impact of sediment-released nutrients on water quality in prairie lakes. Interim reports prepared in 1984, 85, and 86, final report prepared in 1987, three publications accepted in primary literature, two MS submitted, plus students Ph.D. Thesis accepted March 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Boreal Institute for Northern Studies

$50 584

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *1988 10*

## 0306-240

Protz, R
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Development of an index of soil quality**

To develop an 'index of soil quality' based on differences between virgin and cultivated soil properties.

Financing/*Financement:* Ontario Ministry of Agriculture and Food

Natural Sciences and Engineering Research Council

**START/*DÉBUT*:** *1987 02*

## 0306-241

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Use of sorbents to remove insoluble sunken liquid chemicals from waterways**

Laboratory phase studies completed in house and very successful.

Financing/*Financement:* Environment Canada, Conservation and Protection

$15 000

**START/*DÉBUT*:** *1987 01* **END/*FIN*:** *1988 01*

## 0306-242

Rainnie, D
(306) 966-7442

University of Saskatchewan

**Criteria for the deliberate release of genetically engineered organisms**

Final report available

Financing/*Financement:* Environment Canada, Conservation and Protection

$19 000

**START/*DÉBUT*:** *1987 01* **END/*FIN*:** *1987 03*

## 0306-243

Rao, S
(416) 336-4924

Rivers Research Branch; National Water Research Institute; Environment Canada

**Role of particulates in the transport and fate of contaminants in fluvial systems**

To define the role of suspended and sediment particles (organic aggregates/inorganic particles) in the downstream transport of contaminants and establish the active fractions. To evaluate the impact, fate and transport of tar sands, and urban contaminants on various river systems using microbiological activity tests.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *ongoing*

## 0306-244

Revill, A
unavailable

A.D. Revill Associates Ltd.

**Feasibility of re-establishing aquatic macrophytes in the Bay of Quinte**

Determine the factors influencing the loss, re-establishment and growth of aquatic vegetation in the Bay. Trial establishment of several different species of aquatic plants to measure plant survival under changing conditions. Determine whether large scale planting of aquatic vegetation in the Bay is feasible.

Financing/*Financement:* Ontario Ministry of Environment

$15 055

**START/*DÉBUT*:** *1987 12*

## 0306-245

Reynoldson, T
(416) 336-4692

Lakes Research Branch; National Water Research Institute; Environment Canada

**Benthic invertebrate/contaminant cycling**

To identify contaminant uptake rates in laboratory and field. To determine the utility of invertebrates as indicators of

contaminant effect. To determine the utility of oligochaetes as a bioassay organism for contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

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## 0306-246

Ribo, J
(306) 975-5789

Environment Canada; Inland Waters Directorate; National Hydrology Research Institute

**Toxic effects of pesticides in the aquatic environment**

To develop a database of comparative toxicity of pesticides using the Microtox assay. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 500

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

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## 0306-247

Robarts, R
(306) 975-6047

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Factors controlling phytoplankton and bacterial production in oligotrophic Redberry Lake**

To determine the temporal and spatial changes in bacterial and phytoplankton standing crops and production and to determine the major factors regulating these populations.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

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## 0306-248

Robarts, R
(306) 975-6047

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**The significance of algal and bacterial production to summer deoxygenation in hypertrophic prairie lakes**

To determine the cycles of phytoplankton standing crop and production in relation to bacterial numbers and production in a hypertrophic lake (Humboldt) and to assess whether summer deoxygenation is the result of phytoplankton die-off and the associated heterotrophic bacterial decomposition process.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

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## 0306-249

Robarts, R
(306) 975-6047

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Bacterial production in aquatic systems - the use of methyl-3H thymidine and 3H leucine for growth rate measurements**

To relate the rate of DNA labelling by thymidine and the rate of protein labelling by leucine in aquatic bacteria to actual measures of bacterial cell production, and assess the universality of these substrates.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* ***END/FIN***: *ongoing*

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## 0306-250

Rosa, F
(416) 336-4525

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment transport and pore water contaminants**

Measure winter sediment flux rates in Lake Erie. Spanish River pore water data interpretation.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$144 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 03*

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## 0306-251

Rothwell, R
(403) 492-2355

University of Alberta; Dept. of Forest Science

**Variability of soil temperature, substrate water content and tree growth on two drained and undrained Alberta peatlands**

Evaluation of the environmental impacts of forested peatland drainage on substrate environments and tree growth. A two year study with report to be submitted to funding agency in 1990.

Financing/*Financement:* Alberta Forest Development Research Trust

$22 250

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1990 11*

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## 0306-252

Rouleau, C
(418) 724-1747

Université du Québec à Rimouski; Département d'océanographie

**Etude de l'accumulation du mercure et de l'antagonisme sélémium-mercure à l'aide d'indicateurs biochimiques chez la crevette du Saguenay, Pandalus borealis.**

Etude de l'antagonisme SéHg chez P. boréalis en évaluant la cinétique d'accumulation par ingestion du Hg (Me-Hg) dans le muscle abdominal en présence ou non de sélénium et en évaluant la réponse physiologique de l'animal en cours de contamination par la mesure de l'activité de l'enzyme malique et de la glutamate déshydrogénase. Projet de maîtrise.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$27 000
**START/*DÉBUT***: *1985 05* ***END/FIN***: *1988 05*

## 0306-253

Roy, J
(418) 656-3284
Université Laval; Département de chimie

**Etude de la radioactivité dans le fleuve Saint-Laurent et ses affluents.**

Identification des radionucléides. Mesure de la radioactivité associée à la matière en suspension. Mesure de la radioactivité dans les eaux brutes et traitées. Détermination de la source des radionucléides dans le bassin du Saint-Laurent. Mesures des retombées atmosphériques dues aux essais nucléaires, aux accidents nucléaires et à l'opération des centrales nucléaires. Modes de transport des radionucléides dans les eaux fluviales. Mesure du temps de transport dans les rivières pour certains nucléides. Mesure de l'état physico-chimique des radionucléides.

Financing/*Financement:* Fonds personnel

$8 000

## 0306-254

Ruel, J
(418) 643-7994
Ministère l'Energie et Ressources; Direction recherche et développement

**Etude de diverses interventions dans les bandes riveraines.**

Identifier une intervention qui, selon les milieux, assure une bonne utilisation des diverses fonctions du milieu riverain: production forestière, production faunique, maintien de la qualité de l'eau.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$40 000
**START/*DÉBUT***: *1987* ***END/FIN***: *1998*

## 0306-255

Rukavina, N
(416) 336-4880
Lakes Research Branch; National Water Research Institute; Environment Canada

**Acoustics of sediments**

To develop and report on acoustic equipment and procedures for mapping the physical properties of polluted basin sediments in lakes and for monitoring sediment accumulation, erosion and resuspension.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$37 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0306-256

Rukavina, N
(416) 336-4880
Lakes Research Branch; National Water Research Institute; Environment Canada

**Sedimentology of Great Lakes and St. Lawrence River sediments**

To study and report on the sedimentology of coastal sediments and polluted basin sediments in the Great Lakes and the St. Lawrence River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Environnement Canada Centre Saint-Laurent

$125 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0306-257

Rybak, M
(416) 624-2964
Aquatic Research & Ecological Consultants

**Fossil Chrysophycean Cyst Assemblages as Paleoindicators in Acidified Laks**

Establishment of new predictive techniques for reconstruction of long-term changes of pH and related chemistry in the lakes in the Province of Ontario. Describe chrysophycean fossil cyst assemblages from 52 lakes in Ontario. Examination of the relationship between chrysophycean cyst assemblages & lake water pH. Development of transfer functions. Determine the concentration of major oxides & trace elements in sediments. Development of a new technique to predict water chemistry characteristics.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 500
**START/*DÉBUT***: *1987 02* ***END/FIN***: *1988 02*

## 0306-258

Schertzer, W
(416) 336-4920
Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling climate variations of air-water interactions**

To collate hydrometeorological/limnological data (1984-1989) to extend existing long term climate data base for Lake Erie and Lake Ontario and to compute surface energy balances and turbulent exchanges. To analyse NWRI surveillance data (1966-present) on the lower Great Lakes to derive basin wide vertical temperature profiles and accurate heat storage estimates for model verification and detection of climate change in lake thermal characteristics. To finalize report on water quality, seston, sediment chemistry and hydrology on Lake St. Clair. This study forms part of the NWRI commitment to the Canada Climate Program.

Financing/*Financement:* Environment Canada, Conservation and Protection

Canadian Climate Program

$400 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1996 04*

## 0306-259

Schmit, J-P
(514) 282-3048

Université du Québec à Montréal; Département de chimie

**Etude exploratoire en vue d'évaluer la bioaccumulation de toxiques induits ou aéroportés chez les poissons en fonction de l'acidité des lacs de la région sud de la Mauricie.**

Etablir le bilan inorganique élémentaire complet des lacs de la région sud de la Mauricie et, à partir d'un choix de trois espèces sportives de poisson, établir le taux de bioaccumulation des principaux inorganiques toxiques et/ou bénéfiques dans la chair de poisson. Rechercher une corrélation entre l'acidité des lacs et la bioaccumulation dans la chair de poisson.

Financing/*Financement:* Québec, ministère de l'Environnement

$36 550

**START/*DÉBUT***: *1988 06* **END/FIN**: *1989 06*

## 0306-260

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evaluation of Canadian and American procedures used in the assessment of complex wastewaters**

To evaluate the sensitivity and reliability of the individual testing procedures using reference toxicant mixtures and treated final wastewaters from a variety of industrial sources. To demonstrate the usefulness of short-term cost-effective acute and chronic toxicity testing procedures to compare with and complement the chemical characterization approach.

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation & Protection

Ontario Ministry of Environment

$306 000

**START/*DÉBUT***: *1987 01* **END/FIN**: *1990 03*

## 0306-261

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Aquatic toxicity impact studies relevant to Ontario sewage treatment plant effluent discharges**

To collect and review relevant municipal STP effluent toxicity and receiving water impact information and studies to help focus the efforts of the Ontario STP effluent toxicity field characterization program. Report has been published by Ontario MOE as a MISA publication.

Financing/*Financement:* Ontario Ministry of Environment

$40 000

**START/*DÉBUT***: *1987 02* **END/FIN**: *1988 02*

## 0306-262

Sekerka, I
(416) 336-4657

Research and Applications Branch; National Water Research Institute; Environment Canada

**Continuous flow analytical systems**

To develop in-line preconcentration and digestion systems. To develop FIA method for ammonia using isothermal distillation principle. To test the robotic system under routine operation conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* **END/FIN**: *1990 03*

## 0306-263

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Valorisation des matériaux de dragage par création d'habitats fauniques.**

Développer des habitats (îles, battures) à partir des produits de dragage dans le Saint-Laurent avec confinement dans le cas des sédiments contaminés.

Financing/*Financement:* Fonds personnel

**START/*DÉBUT***: *1985*

## 0306-264

Servos, M
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Fate and effects of atmospheric contaminants transported across lake air/water interfaces**

To investigate the factors controlling the gas transfer of persistent toxic compounds at the air-water interface.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1992 03*

## 0306-265

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Point source impact monitoring techniques; marine benthic environment**

Subproject title: Point source benthic biological monitoring in Tuktoyaktuk Harbour, NWT. 1) To assess effects of contaminants released into the harbour on the indigenous benthic fauna. 2) To assess methods for studying sublethal effects on benthic fauna to determine which methods are

suitable for wider application to programs for monitoring impacts from Beaufort Sea development.

Financing/*Financement:* Northern Oil and Gas Action Program

Environment Canada, Conservation and Protection

$320 000

**START/*DÉBUT***: *1984 04* **END/*FIN***: *1988 03*

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## 0306-266

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea baseline monitoring program for Amauligak drilling and production activities**

To conduct a baseline survey near the Amauligak F-24 wellsite to provide data which can be used as a benchmark for future environmental effects monitoring programs.

Financing/*Financement:* Northern Oil and Gas Action Program

Baseline Studies Fund

$50 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 03*

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## 0306-267

Sherry, J
(416) 336-4813

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Atrazine detection**

To develop a method to detect atrazine in water.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

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## 0306-268

Sherry, J
Wilkinson, R
(416) 336-4813

Research and Applications Branch; National Water Research Institute; Environment Canada

**Screening techniques for the detection of pollutants**

Evaluate and adapt an enzyme immunoassay screening technique for the detection of pentachlorophenol in environmental samples. Complete evaluation/adaptation of screening test for the detection of Atrazine and transfer to the NWQL. Further improve RIA for the detection of PCDDs. Continue to implement the RIA for PCDDs in the NWQL. Use the RIA to detect PCDDs in pulp and paper mill effluent (subject to National Task Force requirements).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

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## 0306-269

Silverberg, N
(418) 724-1753

Université du Québec à Rimouski; Département d'océanographie

**La biogéochimie et la diagénèse précoce de l'interface eau-sédiment marin**

Comprendre les interactions des particules en voie de sédimentation et les sédiments avec les processus biologiques chimiques et les transformations et flux qui en résultent. Les études dans le chenal laurentien comprennent le cycle de la matière organique, les métaux, la bioturbation et les flux verticaux.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$22 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1989*

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## 0306-270

Snodgrass, W
(416) 671-2600

Beak Consultants

**Prediction of rate of oxygen depletion in recreational, urbanized and agricultural lakes**

To relate the oxygen cycle to inputs of nutrients and dissolved organic carbon. To relate the model to fisheries potential data (if available). To test the model upon the Muskoka-Haliburton-Kawartha Lakes, and recreational lakes subjected to agricultural/urban influences.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$64 300

**START/*DÉBUT***: *1986 11* **END/*FIN***: *1989 10*

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## 0306-271

Stein, J
(418) 656-2945

Université Laval; Centre de recherche en biologie forestière

**Simulation du transport des polluants atmosphériques dans les écosystèmes forestiers et aquatiques.**

Ce programme de recherche représente un élément important du programme d'évaluation de l'impact des précipitations acides sur les écosystèmes aquatiques et forestiers où l'on veut définir des seuils de dépôts atmosphériques acceptables et vérifier ces seuils cibles au moyen de modèles prédictifs d'impact. L'objectif du programme consiste à développer un simulateur mathémathique des processus chimiques et hydrologiques à l'échelle d'un bassin versant et de le vérifier à l'aide de données prises sur le terrain. L'hiver et le printemps sont les périodes choisies pour simuler le cheminement des composantes chimiques dans l'écosystème forestier. L'étude est effectuée sur le bassin du lac Laflamme à la station expérimentale de la forêt Montmorency de l'Université Laval.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec: FCAR, Canada: CRSNG

Fonds institutionnel de recherche

$566 000
**START/*DÉBUT***: *1987 05* ***END/FIN***: *1990 08*

## 0306-272

Stokes, P
(416) 978-6526
Institute for Environmental Studies; University of Toronto

**Metal Uptake by Cladophora Glomerata in Niagara River**

1. To determine the rate of uptake and loss of selected heavy metals in Caldophora Glomerata in the Niagara River. 2. To determine the seasonal variation in selected heavy metals in Cladophora Glomerata in the Niagara River.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$7 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 04*

## 0306-273

Stokes, P
(416) 978-6526
Institute for Environmental Studies; University of Toronto

**Accumulation and Pathways of Mercury in Benthic Invertebrates**

The overall objective of the study is aimed at a better understanding of the fate of mercury in invertebrates, in order to fill the missing link between fish mercury and sediment mercury contents. A better understanding of mercury in remote aquatic ecosystems should be achieved.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$45 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1988 07*

## 0306-274

Stokes, P
(416) 978-6526
Institute for Environmental Studies; University of Toronto

**Factors contributing to the abundance and persistence of green filament algal mats in acidic lakes**

To provide an explanation for the occurrence and persistence of algal mats in acidified lakes (pH 5.5) and to provide an explanation for the lack of accumulation and persistence of the mats in otherwise comparable habitats in less acidic lakes.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$89 800
**START/*DÉBUT***: *1986 09* ***END/FIN***: *1990 08*

## 0306-275

Stokes, P
France, R
(416) 978-4545
Institute for Environmental Studies; University of Toronto

**Influence of lake pH and macrograzers on nuisance metaphytic algal growth**

To determine factors (primary and secondary) related to the increased growth of attached and metaphytic zygnematacean algae in softwater lakes.

Financing/*Financement:* Ontario Ministry of Environment
$28 000

## 0306-276

Strachan, W
(416) 336-4775
Lakes Research Branch; National Water Research Institute; Environment Canada

**Environmental distribution of toxic chemicals**

Investigate the role of the atmosphere in loading toxic chemicals to Canadian surface waters.

Financing/*Financement:* Environment Canada, Conservation and Protection
Great Lakes Water Quality
$300 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0306-277

Sutherland, D
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Criteria for the control and monitoring of petroleum development impacts on the Mackenzie River**

To develop criteria for the regulation and monitoring of petroleum waste discharges to the Mackenzie River through the assessment of impacts on water and sediment quality and biota (toxicity and bioaccumulation). Summary report available in 1988.

Financing/*Financement:* Northern Oil and Gas Action Program
$330 000
**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0306-278

Sutherland, D
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of impact detection techniques and approaches at a gold mine in the NWT - Lupin mine**

To monitor the impact of gold mining effluents on water quality, sediment, and biota in Contwoyto Lake; and to evaluate monitoring techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection
$24 000
**START/*DÉBUT***: *1985 04* ***END/FIN***: *1986 03*

## 0306-279

Thomas, R
(416) 336-4998

Rivers Research Branch; National Water Research Institute; Environment Canada

**LRTAP Monitoring Coordination**

To coordinate assemblage, editing and evaluation of aquatic monitoring data and commence integrated report preparation.

Financing/*Financement:* Environment Canada, Conservation and Protection

Long Range Transport of Airborne Pollutants Program Funds

$35 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 04*

## 0306-280

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Non-target impacts of bran-bait formulations of grasshopper control agents in prairie ecosystems**

(as above) Final report due March 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

Agriculture Canada

**START/*DÉBUT***: *1989 01* **END/*FIN***: *1990 03*

## 0306-281

Thompson, T
(416) 235-5890

Ontario Ministry of Environment; Lab Services Branch; DWO Section

**Development of methodology for analysis of 2, 3, 7, 8 - substituted dioxins/furans in fish**

Develop and validate a method for definitive analysis of the 17 dioxins/furans that have chlorine substituted at the 2, 3, 7, 8 - positions.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 04*

## 0306-282

Thomson, C
(416) 688-5550

Brock University; Dept. of Geography

**Recreational corridors in regional Niagara**

To map all natural and man-made recreational attractions, facilities etc., and to identify the major corridors in which the major features may be found.

Financing/*Financement:* Brock University

## 0306-283

Tibbatts, W
(204) 983-7788

Environment Canada; Conservation & Protection; Environmental Protection

**Fate and effects of pesticides under a zero-till regime**

To assess what the off-target impacts of chemicals used under a zero-till regime are, and to assess their environmental significance in a small watershed in west-central Manitoba. Interim report giving direction for further study in spring 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989 09* **END/*FIN***: *1992 09*

## 0306-284

Tilden, D
Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**'Environmental Atlas for Beaufort Sea Oil Spill Response' by D.F. Dickens, et al for EPS, March 1987**

To provide environmental information relevant to the planning and implementation of year-round oil spill countermeasures in both coastal and offshore areas of the Beaufort Sea. Final report is available free of charge while quantities last, from EPS - NWT District Office, P.O. Box 370, Yellowknife, NWT, X1A 2N3.

Financing/*Financement:* Northern Oil and Gas Action Program

$265 040

**START/*DÉBUT***: *1985 06* **END/*FIN***: *1987 06*

## 0306-285

Trevors, J
(519) 824-4120

University of Guelph

**Use of laboratory microcosms to investigate genetic interaction between bacteria**

Final report dated March 14, 1988 available

Financing/*Financement:* Dept. of Supply and Services Canada

Environment Canada, Conservation and Protection

$45 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 03*

## 0306-286

Tsui, P
(403) 260-7717

Mobil Oil Canada, Ltd.

**Hibernia: environmental impact statement**

Assessment of the biological and socioeconomic impacts of development of an offshore oil field on the Grand Banks.

Financing/*Financement:* Mobil Oil Canada, Ltd.

$8 000 000

**START/*DÉBUT***: *1980 02* **END/*FIN***: *1985 06*

## 0306-287

Turchenek, L
(403) 438-7517

Alberta Research Council; Terrain Sciences Dept.

**Present and potential effects of anthropogenic activities on waters associated with peatlands in Alberta**

To describe the present and potential effects of anthropogenic activities on waters associated with peatlands in Alberta based on review and analysis of pertinent world and local literature.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$164 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0306-288

Vaillancourt, G
(819) 376-5053

Université du Québec à Trois-Rivières; Département de chimie biologie

**Suivi environnemental dans le secteur des installations nucléaires de Gentilly**

Etudier l'impact des rejets thermiques sur l'écosystème aquatique de ce secteur fluvial.

Financing/*Financement:* Hydro-Québec

$30 000

## 0306-289

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Développement d'un test écotoxicologique sublétal avec du zooplancton (ATP)**

Bioessai de toxicité à count terme et sublétal pour zooplancton au niveau biochimique.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$30 000

**START/*DÉBUT***: *1988 08* ***END/FIN***: *1989 12*

## 0306-290

Van Coillie, R
Sloterdijk, H
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Contaminants décelés dans la phase aqueuse du fleuve St-Laurent (Cornwall - Montréal)**

Toxiques transportés dans le fleuve avant Montréal au Québec.

Financing/*Financement:* Environnement Canada, Conservation et protection

$6 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 06*

## 0306-291

VanLoon, G
unavailable

Queen's University, Dept. of Chemistry

**Trace metals and phosphorus speciation studies of the sediments of the Bay of Quinte, Lake Ontario**

To provide information on the distribution of arsenic, copper, cobalt, nickel, lead, zinc and phosphorus among the components of the Bay sediment. Additional information to determine the process of phosphorus release from the sediments. Understanding of each element's affect on biological productivity of the Bay.

Financing/*Financement:* Ontario Ministry of Environment

**START/*DÉBUT***: *1987 10*

## 0306-292

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Evaluation du besoin d'une politique de restauration des lacs acides par la pratique du chaulage (avant-projet).**

non disponible

Financing/*Financement:* Québec, ministère du Loisir, de la Chasse et de la Pêche

$17 400

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1988 04*

## 0306-293

Vézina, L
(514) 774-0660

Mapaq; Service recherche en phytotechnie de Saint-Hyacinthe

**Stabilisation des berges de cours d'eau agricoles par l'ensemencement de plantes herbacées.**

Evaluer l'effet de l'engazonnement de berges de cours d'eau: comme moyen de mitigation de la dégradation des talus et bandes riveraines; comme moyen pour nuire à l'établissement de mauvaises herbes sur les talus; comme intervention naturelle pour protéger les eaux des voies aménagées de la contamination directe par des polluants agricoles (pesticides et engrais).

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

$10 000

**START/*DÉBUT***: *1985 10* ***END/FIN***: *1988 10*

## 0306-294

Vincent, B
(418) 724, 1765

Université du Québec à Rimouski; Département d'océanographie

**Ecologie des bivalves benthiques intertidaux dans l'estuaire du Saint-Laurent.**

Modéliser les patrons de variation du programme d'allocation d'énergie en fonction des facteurs biotiques et abiotiques. Mettre en évidence le couplage littoral-large dans

l'estuaire du Saint-Laurent et ses impacts sur la production primaire et secondaire du littoral.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation UQAR

Fonds institutionnel de recherche

$75 700

## 0306-295

Waite, D
(306) 780-6438

Environment Canada; Environmental Protection

**Pesticides movement in a prairie watershed**

To assess the extent of movement of pesticides from agricultural land to surrounding water bodies.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$36 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

## 0306-296

Waite, D
(306) 780-6438

Environment Canada; Environmental Protection

**Spring run-off of pesticides in Saskatchewan**

To measure three pesticides in dugouts after spring run-off. Report to be produced by April 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

## 0306-297

Waite, D
(306) 780-6438

Environment Canada; Environmental Protection

**South Saskatchewan watershed**

To determine the distribution and impact of pesticides entering the watershed.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 03*

## 0306-298

Waite, D
(306) 780-6438

Environment Canada; Conservation and Protection; Environmental Protection

**South Saskatchewan watershed study**

Measure the use of agricultural pesticides in a small agricultural watershed and the movement of these chemicals into and persistance in the surface and groundwater.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

Toxics Program Funding

$110 000

**START/*DÉBUT***: *1984 04* **END/*FIN***: *1989 03*

## 0306-299

Waite, D
(306) 780-6438

Environment Canada; Conservation and Protection; Environmental Protection

**Effect of abandoned uranium mine tailings on Langley Bay, Saskatchewan**

To measure the movement, accumulation and impact of radionuclides from abandoned uranium mine tailings on the environment of Langley Bay, Lake Athabasca, Sask. One report completed.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000

**START/*DÉBUT***: *1983 07* **END/*FIN***: *1988 05*

## 0306-300

Waite, D
(306) 780-6438

Environment Canada; Conservation and Protection; Environmental Protection

**Persistence and movement of picloram herbicide in a northern Saskatchewan watershed**

To measure the persistence of picloram on the Jummy Lake Air Weapons Range and the movement of the chemical off of the target site. Reports completed.

Financing/*Financement:* Department of National Defence

$60 000

**START/*DÉBUT***: *1982 08* **END/*FIN***: *1987 03*

## 0306-301

Walters, M
(416) 895-1281

Lake Simcoe Conservation Authority

**In situ determination of fecal indicator bacteria survival in agriculturally impacted watersheds**

To document and investigate the seasonal variations in bottom sediments and water columns, including the environmental factors that may influence bacterial survival. To provide bacterial survival data required to develop a transport model and to assess the contribution of individual inputs from agricultural sources on beaches.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$154 000

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1990 10*

## 0306-302

Warwick, W
(306) 975-5739

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Biological assessment of toxic chemical effects on freshwater ecosystems**

To finalize and process research data on chironomid responses to contaminants in freshwater ecosystems. To develop new research initiatives for FY 1990-91 in benthic ecology, toxicology and/or palaeolimnology.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/FIN**: *ongoing*

## 0306-303

Wayland, M
Boag, D
(403) 492-4161

University of Alberta

**Fate of carbofuran and its effect on aquatic macroinvertebrates in prairie dugouts**

1. To examine the immediate and seasonal effects of carbofuran on natural populations of benthic macroinvertebrates in prairie dugouts. 2. To examine the rate of degradation of carbofuran in the water column, in the interstitial water, and in the sediments.

Financing/*Financement:* World Wildlife Fund

Delta Waterfowl Research Station

Environment Canada, Conservation & Protection

$21 600

**START/*DÉBUT***: *1985 09* **END/FIN**: *1988 08*

## 0306-304

Weinberger, P
(613) 564-2334

University of Ottawa; Biology

**Mechanisms of aquatic phytobiotic interactions with some chemical stressors**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$80 520

**START/*DÉBUT***: *1984 04* **END/FIN**: *1990 03*

## 0306-305

Whillans, T
(705) 748-1389

Environmental & Resource Studies; Trent University

**Designation of natural heritage areas around Lake Ontario to maintain watershed ecosystem integrity**

none given

Financing/*Financement:* Laidlaw Foundation

$7 000

**START/*DÉBUT***: *1989 03*

## 0306-306

Wiegand, R
(604) 922-4809

SciTech Consultants Inc.

**Restoration of lakes by trapping sediment in small dredged holes (UP G6-014)**

To demonstrate and evaluate the effectiveness of a dredged depression in a lakebed for entrapping nutrient-rich sediments, as a means of eutrophication control and water quality improvement in Chain Lake, B.C.

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation and Protection

British Columbia Ministry of Environment & Parks

Similkameen

$420 370

**START/*DÉBUT***: *1987 11*

## 0306-307

Winterhalder, K
(705) 675-1151

Laurentian University; Biology

**The effects of land reclamation procedures on groundwater and streamwater chemistry**

To determine whether the application of dolomitic limestone, as used in the Sudbury Land Reclamation Programme, has a beneficial effect on pH and toxic metal content of groundwater and stream water within the watershed, thereby reducing the necessity of liming acid lakes fed by such watersheds. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$16 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1988 10*

## 0306-308

Wishart, D
(403) 420-5210

Interprovincial Pipe Line (NW) Ltd.

**Aquatic monitoring studies of the Norman Wells to Zama Pipeline**

To determine if pipeline construction or operation were contributing to degradation of aquatic habitats or water quality along the pipeline route. Interim and final reports are available for viewing from Boreal Institute for Northern Studies and Arctic Institute of North America.

Financing/*Financement:* Interprovincial Pipe Line Company

$250 000

**START/*DÉBUT***: *1984 01*

## 0306-309

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Pesticides in rainwater**

To assess the contribution of pesticides in rainwater to aquatic contamination. Report to be produced in April, 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1989 03*

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## 0306-310

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Lindane**

To assess the impact of lindane into aquatic systems. Report to be produced in April, 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$12 500

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1989 03*

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## 0306-311

Yung, Y-K
Stokes, P
(416) 978-7141

Institute for Environmental Studies; University of Toronto

**Taxonomy and general biology of zygnemataceae (chlorophyta) in Ontario lakes**

To investigate the taxonomy and biology of the filamentous green algae proliferating in the littoral areas of many Ontario lakes in recent years.

Financing/*Financement:* Ontario Ministry of Environment

$35 000

**START/*DÉBUT*:** *1987 07* **END/*FIN*:** *1989 01*

# 04

## HUMAN

## *ASPECT HUMAIN*

## 0400-1

Bardecki, M
(416) 979-5038
Ryerson Polytechnical Institute

**Evaluation of climate change impacts on wetlands**

Report in support of IPCC Working Group II.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$3 000

**START/*DÉBUT***: *1989 06* ***END/FIN***: *1989 09*

## 0400-2

Berkes, F
(416) 688-5550
Institute of Urban and Environmental Studies; Brock University

**A computer based environmental archive on waste management**

To collect references on waste management, including items related to the Ontario Waste Management Corporation (OWMC), and make them available through a microcomputer-based system.

Financing/*Financement:* Social Sciences & Humanities Research Council

$30 000

**START/*DÉBUT***: *1986 06*

## 0400-3

Dubeau, H
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Caractérisation moléculaire des altérations structurales des gènes eucaryotes mutés in vitro par divers agents.**

Développer une technologie permettant l'étude des altérations induites dans la structure des gènes eucaryotes par divers agents mutagènes. Faire la caractérisation des altérations induites dans la structure du gène CANI de Saccharomyces cerevisiae et du gène hprt de lymphocytes humains par les rayons X, l'ozone et l'EMS.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$60 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0400-4

Duerden, F
(416) 979-5038
Applied Geography Department; Ryerson Polytechnical Institute

**Land resource atlas for council for Yukon Indians**

Preparation of a resource atlas for native land claims in the Yukon. Atlas completed.

Financing/*Financement:* Donner Canadian Foundation

$126 000

**START/*DÉBUT***: *1982 05* ***END/FIN***: *1984 12*

## 0400-5

Hilts, S
Moull, T
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Natural heritage stewardship research project**

To develop mechanisms to encourage the conservation and wise management of privately-owned significant natural heritage areas in Ontario, including recognition, tax rebate, and management assistance programs. Agricultural land stewardship is being incorporated. (Annual reports are available).

Financing/*Financement:* Ontario Heritage Foundation

World Wildlife Fund

Nature Conservancy of Canada

$315 000

**START/*DÉBUT***: *1984 06*

## 0400-6

Johnston, R
(403) 237-1234
BP Canada Inc.

**Field surveys and monitoring of bald eagles in the vicinity of Hope Brook Mine, Newfoundland**

To determine and monitor population size and parameters, distribution, breeding success and other ecological parameters of bald eagles in the vicinity of the Hope Brook Mine, Newfoundland ie. Cinq Cerf Bay, Couteau Bay, Connoire Bay. Period of study 1986-1989. Interim reports available from BP Canada Inc., Calgary (see above).

Financing/*Financement:* Hope Brook Gold Inc.

$20 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 07*

## 0400-7

Johnston, R
(403) 237-1234
BP Canada Inc.

**LaPoile caribou herd study, Newfoundland**

1. To determine and monitor herd's population size and parameters, rates and causes of mortality, seasonal distribution and habitat (year round) within herd's total range, and numbers, distribution and habitat use in vicinity of Hope Brook Mine. 2. To assess what effects development of the Hope Brook Mine has on the herd re:above parameters. Annual reports available commencing in 2nd half, 1988, for four years.

Financing/*Financement:* Hope Brook Gold Inc.
Newfoundland and Labrador Wildlife Division
$800 000
**START/*DÉBUT***: *1987 05* ***END/FIN***: *1991 04*

## 0400-8

Parenteau, R
(514) 343-6386
Université de Montréal; Institut d'urbanisme

**Impact de la participation du public aux audiences publiques sur l'évaluation des impacts environnementaux**

Relever les requêtes exprimées par le public au cours des audiences, pour vérifier si ces requêtes sont retenues par les commissaires enquêteurs et par les ministres. Comparer cet impact de la participation du public selon trois procédures de consultation (Québec, Ontario, Ottawa)

Financing/*Financement:* Conseil de recherches en sciences humaines
$70 000
**START/*DÉBUT***: *1984* ***END/FIN***: *1987*

## 0400-9

Reveret, J-P
(514) 282-8260
Université du Québec à Montréal; Maitrise en science de l'environnement

**Gestion intégrée des déchets urbains solides à Montréal.**

Elaborer des scénarios de gestion rationnelle et intégrée de la filière des déchets urbains solides dans l'île de Montréal afin de leur permettre de déterminer des politiques, dans ce domaine, en toute connaissance de cause. A l'intérieur de ce projet mon apport consiste à établir une monographie détaillée de la situation à Montréal et dans la région métropolitaine en ce qui concerne les déchets urbains solides. Colliger des statistiques, des analyses de la composition, etc.

Financing/*Financement:* Québec, ministère de l'Environnement

# HEALTH

# *SANTÉ*

## 0401-1

Abenhaim, L
Delfino, R
n. disponible

Université McGill; Département d'épidémiologie et de biostatistique

**Etude de faisabilité en vue d'une étude épidémiologique sur les effets des précipitations acides sur la santé.**

Déterminer l'opportunité et la possibilité de réaliser au Québec une étude épidémiologique pour évaluer les effets des précipitations acides (polluants transportés sur de longues distances) sur la santé des québécois.

Financing/*Financement:* Québec, ministère de l'Environnement

Québec, ministère de la Santé et des Services Sociaux

$24 000

**START/*DÉBUT*:** *1989* **END/FIN:** *1990 04*

## 0401-2

Armstrong, V
(613) 957-1504

Health and Welfare Canada; Environmental Health Directorate

**Environmental criteria (major goal: 2308)**

To evaluate the health hazards associated with exposure to environmental and workplace contaminants and recommend measures to control human exposure to these.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$1 219 817

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0401-3

Armstrong, V
(613) 957-1504

Health and Welfare Canada; Environmental Health Directorate

**Environmental criteria (major goal: 2309)**

To serve as national correspondent to the International Register of Potentially Toxic Chemicals (IRPTC) and develop and maintain an information resource to support bureau programs.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$277 963

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0401-4

Bull, G
Hyslop, W
(604) 682-8777

Nova Tec Consultants Inc.

**Assessment of Takla Landing contour trench ground disposal system - biomat performance**

To study biomat development and performance on natural soil, imported sand and geotextile cloth leading to more refined design criteria for the ground disposal of septic tank effluent under adverse site conditions. Final report due Nov. 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Mortgage & Housing Corporation

$19 337

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1989 11*

## 0401-5

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**PCB sampling and analysis procedures**

To develop analytical methods for measurement of PCBs in oils, soils, ambient air and stack emissions. Recommended procedures for: oil available Dec. 1987 (revised April 1989), soil available July 1988 (revised April 1989), ambient and source emissions available April 1989. Revisions will continue to be ongoing.

Financing/*Financement:* Environment Canada, Conservation and Protection

$120 000

**START/*DÉBUT*:** *1984 00* **END/FIN:** *1989 00*

## 0401-6

Clark, D
Sweeney, G
(416) 521-2100

Department of Medicine; McMaster University

**The Quantitative Assessment of Toxicity of Ingested and Inhaled Halogenated Aromatic Hydrocarbons**

1. To obtain information on suppression of the immune response by halogenated aromatic hydrocabons, including TCDD, PCBs and PBBs; 2. To develop sensitive, non-invasive techniques for biological monitoring of toxic effects of aromatic hydrocabons; 3. To clarify the effect of age and route of exposure on 'no demonstrable effect' dose level.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$139 100
**START/*DÉBUT***: *1984 09*

## 0401-7

Cullimore, D
(306) 584-4556
Regina Water Research Institute

**Monitoring microbial activity in lab anaerobic filters treating septic tank effluent at low temperatures**

By monitoring the dynamic microbiological processes taking place as the biofilm develops on both plastic and geosynthetic media contribute to the understanding of basic phenomena leading to the design of improved anaerobic septic tanks effluent filters under Canadian climatic conditions. Final reports unpublished by the sponsor - 'Monitoring Microbial Activity in Laboratory Anaerobic Filters Treating Septic Tank Effluent at Low Temperatures', RWRI Report Number 54, Dec. 1987 and 'A Statistical Interpretation of the Microbial Activity in Laboratory Septic Tank Effluent Filter Reactors at Low Temperature', RWRI Report Number 56, Mar. 1988. Both reports by Dr. D. Cullimore and staff at Regina Water Research Institute, University of Regina.

Financing/*Financement:* Environment Canada, Conservation & Protection
$13 000
**START/*DÉBUT***: *1987 01* **END/*FIN***: *1988 03*

## 0401-8

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**Health surveillance program in the grain industry**

none given
Financing/*Financement:* Labour Canada
$80 000
**START/*DÉBUT***: *1986 07* **END/*FIN***: *1988 07*

## 0401-9

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**External evaluation of the health surveillance program in the grain industry**

none given
Financing/*Financement:* Labour Canada
$49 500

## 0401-10

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**Pesticides, soft tissue sarcoma, lymphoma and multiple myeloma; in three regions of Canada**

A pilot study proposal using case-control studies in three regions of Canada.

Financing/*Financement:* Health and Welfare Canada
$27 676

## 0401-11

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**Study of respiratory health in swine producers and indoor air quality in animal confinement building**

Effect of animal confinement building indoor air quality on pig farmers

Financing/*Financement:* Health and Welfare Canada
$282 567
**START/*DÉBUT***: *1988 10* **END/*FIN***: *1991 06*

## 0401-12

Douglas, G
(613) 957-3137
Health and Welfare Canada; Environmental Health Directorate

**Predictive toxicology (major goal: 2407)**

To conduct toxicity and mutagenicity studies on environmental contaminants.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$773 342
**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0401-13

Douglas, G
(613) 957-3137
Health and Welfare Canada; Environmental Health Directorate

**Predictive toxicology (major goal: 2408)**

To develop improved methods for prediction of toxicity and mutagenicity. Validate and implement the recommendations of the Environmental Contaminants Advisory Committee on Mutagenesis for conducting genotoxicity tests.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$1 133 206
**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0401-14

Dubeau, H
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Détection de génotoxicité dans les fluides biologiques des travailleurs-es exposés-es aux drogues antinéoplasiques.**

Mettre en évidence la génotoxicité des urines et du sang de groupes de travailleurs-es exposés-es aux drogues anti-

néoplasiques en fonction des types d'occupation et des fréquences de manipulation grâce à deux méthodes de détection de l'exposition récente: test de Ames et SOS-chromotest. Mettre au point un outil permettant de vérifier l'efficacité des mesures de protection des travailleurs-es.

Financing/*Financement:* Fonds institutionnel de recherche

$11 000

**START/*DÉBUT***: *1986 12* **END/*FIN***: *1988 05*

## 0401-15

Dubeau, H
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Caractérisation moléculaire des altérations structurales des gènes eucaryotes mutés in vitro par divers agents.**

Développer une technologie permettant l'étude des altérations induites dans la structure des gènes eucaryotes par divers agents mutagènes. Faire la caractérisation des altérations induites dans la structure du gène CANI de Saccharomyces cerevisiae et du gène hprt de lymphocytes humains par les rayons X, l'ozone et l'EMS.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$60 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1989 03*

## 0401-16

Dubeau, H
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Caractérisation moléculaire des mutants induits in vivo par les drogues antinéoplasiques, chez l'humain.**

Utiliser les techniques de génie génétique pour caractériser les altérations du gène hprt dans les lymphocytes des patients en chimiothérapie et des travailleurs en administrant ces drogues. Déterminer les types et fréquences d'altération observés chez le personnel et les patients exposés aux drogues antinéoplasiques afin de déterminer leur spécificité.

Financing/*Financement:* Société de recherche sur le cancer

$68 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1989 06*

## 0401-17

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Ozone research**

Conduct research on stratospheric ozone layer, operate ozone monitoring network and apply knowledge to environmental problem of depletion of the ozone layer.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1975 04* **END/*FIN***: *ongoing*

## 0401-18

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Investigate the effects of minor constituents on pollution of the stratosphere**

To conduct research on the basic physical processes of the stratosphere emphasizing ozone photochemistry. Apply knowledge to environmental problems.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1974 04* **END/*FIN***: *ongoing*

## 0401-19

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Monitoring of the protective ozone layer (MOPOL)**

Research the basic physical processes of the stratosphere with emphasis on ozone photochemistry as pertains to the environmental problem of stratospheric pollution.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT***: *1983 04* **END/*FIN***: *ongoing*

## 0401-20

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Space shuttle flights of the SPEAM and BEAM (Sunphotometer and Brewer Ozone Spectrophotometer)**

Monitor environment from space researching the basic physical processes of the stratospheric, emphasizing ozone photochemistry. Apply this knowledge to environmental problems.

Financing/*Financement:* Industry Science and Technology Canada

**START/*DÉBUT***: *1984 04* **END/*FIN***: *ongoing*

## 0401-21

Fournier, M
(514) 987-3345

TOXEN; Université du Québec à Montréal

**Immunotoxicologie de l'environnement**

Etude des effets xénobiotiques de l'environnement sur le système immunitaire et sur les conséquences pour la résistance aux infections virales, bactériennes et aux cancers. En parallèle avec ce projet, nous visons à développer des outils: d'évaluation du potentiel immunotoxique ; de détermination d'indicateurs précoces d'intoxication.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Université du Québec, Programme de développement académique du réseau

Université du Québec à Montréal

$196 000
**START/*DÉBUT***: *1988 05* ***END/FIN***: *1990 04*

## 0401-22

Fournier, M
(514) 282-3345
Université du Québec à Montréal; Département des sciences biologiques

**Immunotoxicologie de l'environnement.**

Etudes des effets de xénobiotiques de l'environnement sur le système immunitaire et sur les conséquences pour la résistance aux infections virales, bactériennes et aux cancers. En parallèle avec l'étude des effets, nous développons des outils d'évaluation du potentiel immunotoxique d'un composé afin d'éprouver les nouveaux produits avant leur dipersion dans l'environnement.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
Toxen-Université du Québec à Montréal
$204 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0401-23

Gilman, A
(613) 957-1876
Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2106)**

To assess hazards of arts and crafts materials, hobby kits, and consumer products containing volatile organic solvents and adhesives.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$79 390
**START/*DÉBUT***: *1985 04* ***END/FIN***: *1987 03*

## 0401-24

Gilman, A
(613) 957-1876
Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2107)**

To assess the hazards and estimate the risks of chemical products sold to the general public. To remove especially dangerous chemical products from the marketplace and/or advise CCA on the adequacy of labels on products that are advertised or sold on the Canadian market with respect to the nature and degree of hazard, directions for use and precautionary information.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$505 932
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-25

Gilman, A
(613) 957-1876
Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2108)**

To provide advice to federal departments and agencies other than CCA on the hazards posed by industrial and consumer chemicals and products.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$239 191
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-26

Godon, D
(418) 687-1090
Centre Hospitalier de l'Université Laval; Dépt. santé communautaire

**Approche géographique à la problématique des pesticides agricoles et de la santé au Québec.**

Déterminer et décrire les associations entre les indicateurs de problèmes de santé (décès par cancer et autres maladies, etc) et les indicateurs environnementaux, dont principalement l'utilisation des pesticides agricoles en milieu rural dans les bassins hydrographiques du Québec. Il vise à identifier les zones et les populations à risques et à formuler des hypothèses étiologiques spécifiques.

Financing/*Financement:* Québec, ministère de l'Environnement
Québec, ministère de la Santé et des Services Sociaux
Canada, ministère de l'Environnnment
$82 500
**START/*DÉBUT***: *1987 01* ***END/FIN***: *1989 12*

## 0401-27

Goodwin, L
Dieken, F
(403) 632-6761
Alberta Environmental Centre

**Determination of sulfide and other reduced sulfur compounds in biosamples**

To investigate sulfide residues in poisoned tissues and blood for postmortem, neurological and toxicological purposes. To study the metabolism and fate of sulfide in biological systems after subacute and acute exposures to hydrogen sulfide.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT***: *1987 01* ***END/FIN***: *1990 01*

## 0401-28

Guidotti, T
(403) 492-6291
University of Alberta; Faculty of Medicine; Occupational Health Program

**Impact on a community of misperceived cancer risk**

1. To determine impact on a community with a normal risk profile the effect of a false report that cancer incidence was elevated. 2. To minimize the effect of this mistake on the community. 3. To analyse implications for understanding behavioural changes in response to perceived threat. Preliminary report available.

Financing/*Financement:* Alberta Community and Occupational Health

## 0401-29

Guidotti, T
Kelly, S
(403) 492-6291

University of Alberta; Faculty of Medicine; Occupational Health Program

**Pesticide-related research**

1. Preparation of guide to management of pesticide toxicity. 2. Dissemination of fact sheets and related materials on pesticide toxicity. 3. Health effects of exposure to herbicides - review and risk assessment (submitted for publication). 4. Feasibility study for investigation of pesticide container recycling and its attendant exposure risks.

Financing/*Financement:* Alberta Environment

## 0401-30

Halfon, E
(416) 336-4917

Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling the fate of contaminants in Lake Ontario in the Toronto waterfront area - environmental simulation**

Finish work on modelling toxic contaminants in the Toronto waterfront, report due in the fall of 1989. Model of toxic contaminants in Lake Ontario. Continue work on the development of an expert system for ranking, this requires assistance of contract computer programmers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment, Municipal Industrial Strategy for Abatement

Great Lakes Water Quality

$200 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0401-31

Hayes, M
Ferguson, H
(519) 823-8800

Department of Pathology; University of Guelph

**The significance of neoplasia in wild fish populations**

To determine the role of environmental pollutants on the pathogenesis of skin and liver tumors in bottom dwelling fish in Lake Ontario and other polluted regions of the Great Lakes. To determine the relationship between carcinogen susceptibility of affected and non affected fish, with carcinogen susceptibility of terrestrial mammals.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1985*

## 0401-32

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluate the levels of VOC, semi-VOC and trace metals from the exhaust of light duty passenger cars in city, urban and highway driving conditions.**

To investigate the contribution of vehicle exhaust to the levels of toxic compounds in city and urban areas in Canada.

Financing/*Financement:* Environment Canada, Conservation & Protection

$10 000

**START/*DÉBUT***: *1989 03* ***END/FIN***: *1989 09*

## 0401-33

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluation of exhaust emissions from urban buses operating on commercially available diesel fuels and potential alternative fuels.**

To investigate the regulated and non-regulated emissions from buses designed to operate as urban transportation vehicles including potential alternative fuels such as alcohol and CNG.

Financing/*Financement:* Environment Canada, Conservation & Protection

Energy, Mines and Resources Canada

Department of Transport Canada

**START/*DÉBUT***: *1989 11* ***END/FIN***: *1991 07*

## 0401-34

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Exhaust emissions from industrial off-road vehicles. (Pilot project)**

To evaluate the regulated and non-regulated emissions from the exhaust of industrial off-road vehicles operating on standard duty cycles.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1989 09*

## 0401-35

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Characterization of exhaust emissions from diesel vehicles operating on 1990's diesel fuel based on tar sands oil.**

To investigate and compare the exhaust emissions from existing commercially available diesel fuel to a diesel fuel made from the tar sands oil.

Financing/*Financement:* Environment Canada, Conservation & Protection

National Research Council

$6 000

**START/*DÉBUT***: *1989 05* **END/*FIN***: *1989 09*

## 0401-36

Jacobs, H
(416) 979-5000

Ryerson Polytechnical Institute

**Relic waste sites in the City of Toronto**

To identify and map the threat posed by historical waste disposal practices to elementary schools. Presentations of results to Public Health Committee and to School Boards.

Financing/*Financement:* Toronto (City of) Environmental Protection Office

**START/*DÉBUT***: *1989 02* **END/*FIN***: *1989 04*

## 0401-37

Le-Huy, P
(819) 376-5071

UQTR; Groupe de recherche en applications industrielles

**Conception d'un système intégré pour la dépollution de l'air contaminé par le styrène.**

Le but principal de cette recherche est de concevoir un système intégré pour la dépollution de l'air contaminé par du styrène. L'étude vise à atteindre les objectifs suivants: Développement d'un système rapide de détection et d'analyse in situ du styrène; traitement numérique des signaux de l'analyse quantitative en vue de bâtir un système de contrôle des vapeurs du styrène; optimisation mécanique des éléments physiques du détecteur; élaboration des algorithmes, sur micro-ordinateur, d'utilisation optimale du détecteur dans un shéma intégré de décontamination de l'air pollué par du styrène. Etant donné l'urgence du problème, les retombées sont immédiates aux différents points de vue: technologique: Disponibilité d'un système intelligent et fiable de détection, in situ, des vapeurs.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

## 0401-38

Mackay, D
(416) 978-4019

Department of Chemical Engineering & Applied Chemistry; University of Toronto

**Multi-media environmental and human exposure assessment of organic contaminants**

To develop the capability of predicting spatial variations of chemical concentrations of selected hazardous substances in the environment from known mean values. Validate the statistical distributions monitoring data obtained for Southern Ontario. Link these environmental concentrations with an exposure assessment model to determine total amounts available to humans through air inhalation, diet & drinking water to identify dominant exposure routes, developing integrated multi-media guidelines.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$116 800

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1988 06*

## 0401-39

Méranger, J
(613) 957-1870

Health and Welfare Canada; Environmental Health Directorate

**Exposure assessment (major goal: 2605)**

To estimate human exposure to contaminants in the environment.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$691 770

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0401-40

Méranger, J
(613) 957-1870

Health and Welfare Canada; Environmental Health Directorate

**Exposure assessment (major goal: 2607)**

To conduct health effects studies in high risk Canadian populations.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$125 614

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0401-41

Messing, K
Mergler, D
(514) 282-3334

Université du Québec à Montréal; Département des sciences biologiques

**Approche biologique à l'environnement de travail.**

Dépister les effets précoces des agents ou conditions dans le milieu de travail sur des indicateurs biologiques. Spécifiquement, étudier les effets génétiques de faibles doses de radiations ionisantes, effets neurotoxiques des solvants, effets physiologiques de la chaleur, du froid.

Financing/*Financement:* Institut de recherche en santé et sécurité du travail

$555 000

## 0401-42

Nagy, E
(416) 336-4685

Lakes Research Branch; National Water Research Institute; Environment Canada

**Polynuclear aromatic hydrocarbons (PAHs) in freshwater systems**

To relate PAH compositions in the sediments of known contaminated areas (Hamilton Harbour, St. Lawrence River) to possible sources. Performance Indicators: 1) To complete the analysis of PAHs in Hamilton Harbour sediments, sediment traps and cores. 2) To study PAH profiles in St. Lawrence River sediment samples. 3) Prepare a report on the Hamilton Harbour results.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$420 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1992 03*

## 0401-43

Palmer, M
(416) 485-7715

Gore & Storrie Limited

**Effects of Hydraulics and Effluent Chlorination on Micro-Organisms of Public Health Significance**

To develop a critique of the statistical methodology used by Beak (project 28PL) and to devise a new approach if the former is inappropriate. To integrate all the data in the appropriate model. To conduct statistical analysis of data to fulfill the objectives of the Beak study.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 900

**START/*DÉBUT***: *1985 02* ***END/FIN***: *1986 02*

## 0401-44

Parker, G
(705) 675-1151

Laurentian University; Biology

**Effects of soil acidification and local smelter emissions on the cadmium content of soils, forage and fecal pellets in deer yards of the Sudbury - Manitoulin area**

To determine cadmium levels & pH of the surficial soils in deer yards designated as either geophysically sensitive (non-buffered), metal contaminated and geochemically sensitive (non-buffered, contaminated) or tolerant (buffered) to acid precipitation. To relate cadmium burdens in surficial soils to levels present in major forage species of deer. To identify browse species serving as potential indicators of prevailing cadmium enrichment conditions. To examine the potential of deer fecal pellets as bioindicators of the availability, exposure-level and/or body burden of cadmium. (Report available as of March 30, 1989).

Financing/*Financement:* Ontario Renewable Resources Research Grant

Wildlife Toxicology Fund

Ontario Ministry of Natural Resources

$26 390

**START/*DÉBUT***: *1986 03* ***END/FIN***: *1989 03*

## 0401-45

Pengelly, L
(416) 525-9140

McMaster University

**Long term effects of SO2 and aerosols on children with asthma**

To evaluate the hypothesis that chronic low-level exposure to air pollution (sulphur dioxide, SO2; total suspended particulate, TSP; and the fine fraction less than 3.3 micrometers aerodynamic diameter of suspended particules, FF) is associated with the severity of asthma in children.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$46 200

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 04*

## 0401-46

Pengelly, L
Goldsmith, C
(416) 525-9140

McMaster University

**Effect of Fine Particles on The Respiratory Health of a Cohort of Young People**

To obtain epidemiological evidence in support of a fine particle standard based on data already collected using the Andersen 2000 Cascade Impactor.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$145 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1989 01*

## 0401-47

Prepas, E
(403) 492-3308

University of Alberta; Dept. of Zoology

**Use of liquid oxygen to aerate deep prairie lakes**

Maintain dissolved oxygen concentrations above 2 mg/l throughout the water column of a deep (34 m) partially meromictic lake basin. Report prepared March 1989 for Alberta Fish & Wildlife Division, manuscript in preparation. Four graduate students working on this project.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

Environment Canada, Conservation & Protection

Alberta Environment

Alberta Fish & Wildlife Division

$124 500

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1998 03*

## 0401-48

Prepas, E
(403) 492-3308

Department of Zoology; University of Alberta

**Use of lime to control algal growth and rooted plants in farm dugouts**

Reduce algal biomass with non toxic substance. Report prepared April 1988 and April 1989. Project will run until March 1991. Reporting will include student's thesis and papers in the primary literature. One manuscript has been accepted in primary literature.

Financing/*Financement:* Alberta Agriculture

Boreal Institute for Northern Studies

Environment Canada, Conservation & Protection

Farming for the Future, Alberta Agriculture

$122 700

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1991 04*

## 0401-49

Ripley, B
(519) 823-8800

Ontario Ministry of Agriculture & Food

**Comparative behaviour of pesticides with respect to worker safety. Re-entry intervals. Dislodgeable residues; pesticide exposure to integrated pest management (IPM) scouts from treated fields**

To identify level of residues on foliage from 9 pesticides at typical re-entry trials: Determine dislodgeable residues for 5 insecticides and 4 fungicides applied to apple leaves will be analyzed over 7 timings (day 0-3). Foliage samples will be examined for total and dislodgeable residues. Analyse patches from IPM scouts entering fields (muck vegetables and apple orchards) at various timings for a screen of pesticide residues (Numerous analytical procedures) ; look at cholinesterase levels of IPM scouts working in the Bradford Marsh area.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$23 800

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1991 03*

## 0401-50

Ritter, L
(613) 957-1852

Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2704)**

To evaluate the toxicity data on new pest control products (including inerts and field residues) and to re-evaluate registered products.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$2 011 458

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-51

Ritter, L
(613) 957-1852

Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2705)**

To develop models to estimate worker and by-stander exposure to pesticides and their field residues. To test the suitability of the models and establish relevant safety factors.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$1 005 630

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-52

Ritter, L
(613) 957-1852

Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2706)**

To develop and assist in the implementation of a Canadian core program for education and training of pesticide applications.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$41 565

**START/*DÉBUT***: *1986 04* ***END/FIN***: *ongoing*

## 0401-53

Robertson, J
(519) 679-3857

Department of Epidemiology and Biostatistics; University of Western Ontario

**Reproductive Outcomes in Southwestern Ontario**

To carry out an epidemiological study of potential health effects caused by chemical spills and potential contamination of drinking water in the Lambton and Kent counties.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$65 000

**START/*DÉBUT***: *1986 07* ***END/FIN***: *1989 09*

## 0401-54

Robertson, J
(519) 661-2162

University of Western Ontario

**Reproductive outcomes in southwestern Ontario, 1980 to 1985**

To determine if an association exists between the consumption of drinking water from the St. Clair River and abnormal outcomes of pregnancy and in the first year of life.

Financing/*Financement:* Ontario Ministry of Health

Ontario Ministry of the Environment

$185 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1989 09*

## 0401-55

Rollin, A
(514) 340-4922

Chemical Engineering; Ecole Polytechnique

**Study of the relationship between biofilm development and geotextile structures**

To study biofilm development on synthetic textiles (geotextiles) leading to the design of proper cloth media in the treatment and disposal of domestic wastewater onsite. Final report unpublished (precompetitive research protected), 'Study of the Relationship Between Biofilm Development and Geotextile Structures', A. Rollin and H. Brisson, Chemical Engineering Dept., Ecole Polytechnique de Montréal.

Financing/*Financement:* Environment Canada, Conservation & Protection

$23 635

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1988 10*

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## 0401-56

Silverman, F
Shepard, R
(416) 979-1495

Gage Research Institute; University of Toronto

**Dose Response for Selected Environmental Air Pollution on Selected Populations**

To examine effects of ambient urban air pollution on cardiorespiratory health and exercise performance in runners.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$169 000

**START/*DÉBUT***: *1985 10* ***END/FIN***: *1989 04*

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## 0401-57

Smoragiewicz, W
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Présence possible des mycotoxines secrétées par les microorganismes retrouvés dans les systèmes de ventilation.**

L'évolution des systèmes de ventilation a été accompagnée d'une série très variée de troubles de santé. Parmi les nombreux facteurs qui peuvent en être responsables, on retrouve les microorganismes entraînés par les courants d'air après une incubation dans les endroits différents des systèmes. Nous proposons une recherche sur la possible production de mycotoxines par des champignons se trouvant dans les systèmes de ventilation.

Financing/*Financement:* Confédération des syndicats nationaux

$13 750

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 09*

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## 0401-58

Smoragiewicz, W
Robitaille, P
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Analyse de certains paramètres microbiologiques et physico-chimiques des eaux usées du réseau d'égout de Montréal.**

L'objectif de notre recherche est d'identifier la présence de certains paramètres biologiques et physico-chimiques pouvant occasionner aux travailleurs des problèmes de santé (microorganismes et produits toxiques) et sécurité (gaz explosifs).

Financing/*Financement:* Fonds institutionnel de recherche

$6 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1988 06*

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## 0401-59

Stelzig, A
(819) 953-1134

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Review of current cleanup criteria, methodology for establishing cleanup criteria**

Report submitted to CCREM, March 1987 - 'Inventory of Cleanup Criteria and Methods to Select Criteria' (IP-71). Develop a methodology for establishing site specific cleanup criteria for application across Canada. Final report will be submitted to CCREM in September 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Alberta Environment

Ministere de l'Environnement du Quebec

$800 000

**START/*DÉBUT***: *1987 02* ***END/FIN***: *1988 09*

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## 0401-60

Stern, B
(613) 957-1877

Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2808)**

To assess the direct health effects of air-borne pollutants.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$2 003 118

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

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## 0401-61

Stern, B
(613) 957-1877

Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2809)**

To assess the indirect effects of LRTAP (acid deposition).

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$249 517

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-62

Stern, B
(613) 957-1877

Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2810)**

To provide support and technical assistance in efforts directed at controlling acidic deposition.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$13 133

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0401-63

Stern, B
(613) 957-1877

Health and Welfare Canada; Environmental Health Directorate

**Long Range Transport of Air-borne Pollutants (major goal: 2811)**

To develop more sensitive parameters for assessing human exposure to pollutants associated with long range transport.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$204 686

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0401-64

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Sulphur gases and organic hydrocarbons relative to industrial development**

To assess the input of reduced sulphur gases and organic hydrocarbons from gas processing facilities as well as other industrial development in relation to background levels as determined at a remote mountain location in Alberta. The findings of this project are contained in an overall report on biophysical aspects of acid deposition in Alberta submitted to the Acid Deposition Research Program (ADRP).

Financing/*Financement:* Canadian Petroleum Association

Alberta Environment

$200 000

**START/*DÉBUT***: *1985 06* **END/FIN**: *1988 06*

## 0401-65

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Air monitoring program for the Swan Hills special waste management facility**

To assess the background organic compounds in the vicinity of the proposed waste incineration site near Swan Hills prior to the operation of the facility. A report of the findings has been submitted to Western Research and subsequently to the Alberta Special Waste Management Corporation.

Financing/*Financement:* Western Research Division of Bow Valley Resources

Alberta Special Waste Management Corporation

$29 000

**START/*DÉBUT***: *1986 01* **END/FIN**: *1987 08*

## 0401-66

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Hazardous organic compounds in sediment in the Strait of Canso**

To assess various hazardous organic compounds, e.g. PAH and chlorinated compounds in the sediment of the Strait of Canso.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$6 000

**START/*DÉBUT***: *1987 10* **END/FIN**: *1988 05*

## 0401-67

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2208)**

To determine the health significance of 1) micro-organisms in drinking water, 2) the organic fraction of drinking water or individual components thereof, and 3) inorganic substances in drinking water.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$660 471

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0401-68

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2209)**

To identify the health hazards posed by point-of-use treatment devices.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$107 820

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0401-69

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2211)**

Development of appropriate legislation, regulations, policies, guidelines, and standards to safeguard drinking water quality.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$480 567

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-70

Tobin, R
(613) 957-3128

Health and Welfare Canada, Environmental Health Directorate

**Drinking water (major goal: 2212)**

To assess the impact on health of water treatment technologies.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$389 307

**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0401-71

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Optimisation paramètrologie pour le contrôle bactérienne des zones à mollusques**

Correlations entre parametres pour le contrôle de la pollution bactérienne de l'eau dans les zones des mollusques.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$216 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1989 10*

## 0401-72

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Drinking water treatment for giardia cyst removal and inactivation**

To investigate the effectiveness of Cl2, Cl02, chloramine and ozone of giardia cysts. Filtration for the removal of cysts is also being invesigated.

Financing/*Financement:* Alberta Environment Research Trust

Alberta Environmental Centre

**START/*DÉBUT***: *1985 09*

## 0401-73

van Roodselaar, A
(403) 632-6761

Alberta Environmental Centre

**Use of PAC for water quality improvement at the City of Edmonton**

To evaluate the effectiveness of PAC in a slurry recirculating clarifier for the removal of organics. Thesis (University of Alberta) available, publications in preparation and green report (AEC) to be prepared.

Financing/*Financement:* City of Edmonton, Alberta

Alberta Environmental Centre

**START/*DÉBUT***: *1987 09*

## 0401-74

van Roodselaar, A
Gray, B
(403) 632-6761

Alberta Environmental Centre

**Elk Island drinking water treatability study**

To evaluate the current treatment system at Elk Island National Park. To study the addition of ozone and GAC technology to overcome current problems with drinking water quality, especially taste and odour.

Financing/*Financement:* Environment Canada Parks

Alberta Environmental Centre

**START/*DÉBUT***: *1988 05*

## 0401-75

van Roodselaar, A
Skinner, F
(403) 632-6761

Alberta Environmental Centre

**Ozone technology applications to drinking water**

To develop and assess current ozone technology for application to drinking water problems in Alberta.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1986 06*

## 0401-76

Viraraghavan, T
(306) 584-4709

University of Regina

**Anaerobic filter treatment of septic tank effluent at low temperatures**

To evaluate the performance of anaerobic septic tank effluent treatment filters operating at 5oC, 10oC and 20oC during startup and subsequently at various hydraulic retention times (HRT) to examine the applicability of the process to Canadian climatic conditions. Final report unpublished by CMHC, 'Anaerobic Filter Treatment of Septic Tank Effluent at Low Temperatures', T. Viraraghaven and K. Dickenson, Faculty of Engineering, University of Regina, Regina, Saskatchewan, March 1988.

Financing/*Financement:* Canadian Mortgage & Housing Corporation

$25 999
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1988 03*

## 0401-77

Wallis, P
(403) 220-5355
Kananaskis Centre for Environmental Research; University of Calgary

**Water treatment procedures for removal of Giardia cysts**

To develop water treatment procedures using conventional equipment and a mobile water treatment plant for removal of Giardia cysts.

Financing/*Financement:* Alberta Environment
**START/*DÉBUT***: *1985 05* ***END/FIN***: *1988 04*

## 0401-78

Wardle, D
(416) 739-4632
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**RAGS observatory**

To conduct long-term operation of an early warning system for climatic change. Radiation changes in 10-12 micron should precede any climatic warming by several decades.

Financing/*Financement:* Panel on Energy Research and Development
**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

## 0402-1

Beckett, P
(705) 675-1151

Laurentian University; Biology

**Tree establishment on acid metal contaminanted soils in Sudbury, Ontario**

Restoration of damaged land to improve aesthetic quality of living in an urban environment. Reports are available.

Financing/*Financement:* Employment and Immigration Canada

Ontario Ministry of Northern Mines and Development

Regional Municipality of Sudbury

$64 000

**START/*DÉBUT***: *1979*

## 0402-2

Désy, J
Gauthier, M
(418) 545-5346

Université du Québec à Chicoutimi; Département des sciences humaines

**FORESPOIR: Dégradation et revalorisation des espaces forestiers au Québec: le cas de la Sagamie.**

Le présent projet se veut une contribution multidisciplinaire et globale à certaines questions cruciales que pose l'état de notre forêt et son mode de gestion, passé et actuel, tout en proposant quelques solutions d'avenir pour en faire un riche patrimoine collectif: valorisation de la biomasse forestière résiduelle; récupération des bois noyés; stratégies coopératives communautaires; profils de formation alternative en foresterie; état et utilisation potentielle de la forêt; passif environnemental des premiers gestionnaires de la forêt.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation UQAC

Coopérative forestière de Girardville

$130 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

## 0402-3

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Western Canadian low-sulphur coal: its expanded use in Ontario**

To assess the costs and benefits of expanding the use of low-sulphur western Canadian coal by Ontario Hydro as a means of controlling acid gas emissions. Final summary report and technical report available.

Financing/*Financement:* Environment Canada, Conservation and Protection

British Columbia Ministry of Environment and Parks

Alberta En..ronment

$210 000

**START/*DÉBUT***: *1985 01* **END/*FIN***: *1986 08*

## 0402-4

Duerden, F
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Land resource atlas for council for Yukon Indians**

Preparation of a resource atlas for native land claims in the Yukon. Atlas completed.

Financing/*Financement:* Donner Canadian Foundation

$126 000

**START/*DÉBUT***: *1982 05* **END/*FIN***: *1984 12*

## 0402-5

Fleising, V
(403) 220-6377

Department of Anthropology; University of Calgary

**Biotechnology and social change, social implications and the 'culture' of the biotechnology industry**

The study of conflict resolution in complex societies. How the regulatory process deals with the translation of biological theory into engineering.

Financing/*Financement:* Social Sciences and Humanities Research Council

## 0402-6

Guidotti, T
(403) 492-6291

University of Alberta; Faculty of Medicine; Occupational Health Program

**Impact on a community of misperceived cancer risk**

1. To determine impact on a community with a normal risk profile the effect of a false report that cancer incidence was elevated. 2. To minimize the effect of this mistake on the community. 3. To analyse implications for understanding behavioural changes in response to perceived threat. Preliminary report available.

Financing/*Financement:* Alberta Community and Occupational Health

## 0402-7

Heeley, W
unavailable

HRAI Technical Services Division

**Survey of community acceptance of air conditioner noise**

Identify the acceptability of sound level of a neighbour's air conditioner or heat pump in an environment when every household has an air conditioner. Identify the community response of the above, when only some residences have air conditioners.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$10 000

**START/*DÉBUT***: *1989 07* **END/*FIN***: *1990 06*

## 0402-8

Knetsch, J
(604) 291-4514

Simon Fraser University; Dept. of Economics

**Environmental valuation research**

To improve the basis for economic valuation of environmental changes; to investigate assessment and policy implications of the recent findings of large disparities between willingness-to-pay and compensation-demanded measures of economic values; to study preference and choice behaviour of people with respect to alternative environmental polices; to examine various legal sanctions; and to further examine the development and use of economic experiments for research in these areas. Output: Article accepted by The American Economic Review (forthcoming) : 'The endowment effect and evidence of non-reversible indifference curves'.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$75 400

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0402-9

Kreutzwiser, R
(519) 824-4120

Department of Geography; University of Guelph

**Perception and Use of Water Demand Management Strategies in Ontario Municipalities**

To assess the committment of Ontario municipalities to water conservation, identify factors affecting conservation practice and provide recommendations to encourage municipal water conservation.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$8 500

**START/*DÉBUT***: *1986 09*

## 0402-10

Mackey, P
(418) 643-6355

Ministère des Transports; Direction de la recherche

**L'aménagement des rues**

Stimuler l'intérêt des citoyens et des autorités municipales sur les façons de traiter l'espace voirie, notamment pour réduire la vitesse de circulation et favoriser les modes les plus compatibles avec l'environnement.Intégrer les rues au milieu environnement, réduire les nuisances associées aux véhicules en milieu urbain (bruit, accidents avec blessés, insécurité) et accroître les attentes des résidants vis-à-vis la qualité de leur milieu de vie. La recherche examine la possibilités d'appliquer au québec les résultats des recherches effectuées sur l'aménagement des rues aux Pays-Bas, en Allemagne et en Australie.

Financing/*Financement:* Québec, ministère des Transports

$15 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1988*

## 0402-11

Paehlke, R
(705) 748-1730

Dept. of Political Studies; Trent University

**Non-regulatory approaches to environmental policy in Canada and the United States**

none given

Financing/*Financement:* Social Sciences & Humanities Research Council

$25 883

**START/*DÉBUT***: *1988 12*

## 0402-12

Parenteau, R
(514) 343-6386

Université de Montréal; Institut d'urbanisme

**Impact de la participation du public aux audiences publiques sur l'évaluation des impacts environnementaux**

Relever les requêtes exprimées par le public au cours des audiences, pour vérifier si ces requêtes sont retenues par les commissaires enquêteurs et par les ministres. Comparer cet impact de la participation du public selon trois procédures de consultation (Québec, Ontario, Ottawa)

Financing/*Financement:* Conseil de recherches en sciences humaines

$70 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1987*

## 0402-13

Payne, R
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Wildlife - related recreation in Ontario and Alberta; user profits and models**

Profile analysis of wildlife - related recreation.

Financing/*Financement:* Social Sciences and Humanities Research Council

$2 040

**START/*DÉBUT***: *1987 09*

## 0402-14

Reveret, J-P
(514) 282-8260

Université du Québec à Montréal; Maitrise en science de l'environnement

**Gestion intégrée des déchets urbains solides à Montréal.**

Elaborer des scénarios de gestion rationnelle et intégrée de la filière des déchets urbains solides dans l'île de Montréal afin de leur permettre de déterminer des politiques, dans ce domaine, en toute connaissance de cause. A l'intérieur de ce projet mon apport consiste à établir une monographie détaillée de la situation à Montréal et dans la région métropolitaine en ce qui concerne les déchets urbains solides. Colliger des statistiques, des analyses de la composition, etc.

Financing/*Financement:* Québec, ministère de l'Environnement

## 0402-15

Tsui, P
(403) 260-7717

Mobil Oil Canada, Ltd.

**Hibernia: environmental impact statement**

Assessment of the biological and socioeconomic impacts of development of an offshore oil field on the Grand Banks.

Financing/*Financement:* Mobil Oil Canada, Ltd.

$8 000 000

**START/*DÉBUT***: *1980 02* ***END/FIN***: *1985 06*

## 0402-16

Whillans, T
(705) 748-1389

Environmental & Resource Studies; Trent University

**Designation of natural heritage areas around Lake Ontario to maintain watershed ecosystem integrity**

none given

Financing/*Financement:* Laidlaw Foundation

$7 000

**START/*DÉBUT***: *1989 03*

# ECONOMIC

# *ÉCONOMIE*

## 0403-1

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Application of three alternate methods of assessing wetland value to Greenock Swamp, Ontario**

Report available from M. Bardecki.

Financing/*Financement:* Canadian Wildlife Service

$18 700

**START/*DÉBUT***: *1988 03* **END/*FIN***: *1988 10*

## 0403-2

Bardecki, M
(416) 979-5038

Ryerson Polytechnical Institute

**Development of an economic-based wetland evaluation system for Canada**

Report available from M. Bardecki.

Financing/*Financement:* Environment Canada, Conservation & Protection

$12 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1987 10*

## 0403-3

Bardecki, M
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Economic and environmental impacts of agricultural land drainage**

Provide base-line data regarding drainage projects in Southern Ontario. Interim Report.

Financing/*Financement:* Environment Canada, Conservation & Protection

Social Sciences and Humanities Research Council

$20 595

**START/*DÉBUT***: *1984 05* **END/*FIN***: *1984 10*

## 0403-4

Canning, R
(416) 639-6320

Zenon Environmental Inc.

**Field demonstration of membrane technology for treatment of landfill leachate**

To demonstrate leachate treatment by means of membrane-based processes. To design, and construct a portable pilot-scale membrane system and operate the system as treatment process at Muskoka Lakes Landfill Site. To assess technical and economic feasibility of this process and make recommendations for applications at other sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$130 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0403-5

Crabbé, P
(613) 564-5824

University of Ottawa; Economics

**History of the economic analysis of natural resources**

none given

Financing/*Financement:* Social Sciences & Humanities Research Council

$22 300

**START/*DÉBUT***: *1988 05* **END/*FIN***: *1989 04*

## 0403-6

Désy, J
Gauthier, M
(418) 545-5346

Université du Québec à Chicoutimi; Département des sciences humaines

**FORESPOIR: Dégradation et revalorisation des espaces forestiers au Québec: le cas de la Sagamie.**

Le présent projet se veut une contribution multidisciplinaire et globale à certaines questions cruciales que pose l'état de notre forêt et son mode de gestion, passé et actuel, tout en proposant quelques solutions d'avenir pour en faire un riche patrimoine collectif: valorisation de la biomasse forestière résiduelle; récupération des bois noyés; stratégies coopératives communautaires; profils de formation alternative en foresterie; état et utilisation potentielle de la forêt; passif environnemental des premiers gestionnaires de la forêt.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation UQAC

Coopérative forestière de Girardville

$130 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

## 0403-7

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evalution & demonstration of advanced coal combustion technologies**

To demonstrate new, cost effective technologies for reducing acid gas emissions.

Financing/*Financement:* Environment Canada, Conservation & Protection

$650 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *ongoing*

## 0403-8

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Petroleum fuel desulphurization**

To examine options for reducing acid gas emissions resulting from combustion of petroleum fuels.

Financing/*Financement:* Environment Canada, Conservation & Protection

$400 000

**START/*DÉBUT*:** *1977* **END/FIN:** *1988 03*

## 0403-9

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Western Canadian low-sulphur coal: its expanded use in Ontario**

To assess the costs and benefits of expanding the use of low-sulphur western Canadian coal by Ontario Hydro as a means of controlling acid gas emissions. Final summary report and technical report available.

Financing/*Financement:* Environment Canada, Conservation and Protection

British Columbia Ministry of Environment and Parks

Alberta Environment

$210 000

**START/*DÉBUT*:** *1985 01* **END/FIN:** *1986 08*

## 0403-10

Ellis, R
(604) 228-2267

University of British Columbia; Dept. of Geophysics & Astronomy

**Lower Mainland seismic array**

To collect and analyze earthquake data to improve understanding of the seismic environment and risk parameters in the Lower Mainland - Strait of Georgia area.

Financing/*Financement:* Energy Mines and Resources Canada

British Columbia Hydro

British Columbia Ministry of Environment & Parks

## 0403-11

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Investigate the effects of minor constituents on pollution of the stratosphere**

To conduct research on the basic physical processes of the stratosphere emphasizing ozone photochemistry. Apply knowledge to environmental problems.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1974 04* **END/FIN:** *ongoing*

## 0403-12

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Monitoring of the protective ozone layer (MOPOL)**

Research the basic physical processes of the stratosphere with emphasis on ozone photochemistry as pertains to the environmental problem of stratospheric pollution.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1983 04* **END/FIN:** *ongoing*

## 0403-13

Finlay, P
(819) 953-1126

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Demonstration of furnace injection of sorbent at the Boundary Dam Power Plant**

To demonstrate & optimize operation of sorbent injection technology on lignite coal.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Electrical Association

Saskatchewan Power Corporation

$5 250 000

**START/*DÉBUT*:** *1982* **END/FIN:** *1988 00*

## 0403-14

Knetsch, J
(604) 291-4514

Simon Fraser University; Dept. of Economics

**Environmental valuation research**

To improve the basis for economic valuation of environmental changes; to investigate assessment and policy implications of the recent findings of large disparities between willingness-to-pay and compensation-demanded measures of economic values; to study preference and choice behaviour of people with respect to alternative environmental polices; to examine various legal sanctions; and to further examine the development and use of economic experiments for research in these areas. Output: Article accepted by The American Economic Review (forthcoming) : 'The en-

dowment effect and evidence of non-reversible indifference curves'.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$75 400

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0403-15

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Demonstration of circulating fluidized bed combustion - Chatham power plant**

To develop a combined SO2/NOx emission control technology to commercial availability.

Financing/*Financement:* Energy, Mines & Resources Canada

New Brunswick Electric Power Corporation

$41 000 000

**START/*DÉBUT*:** *1984* **END/*FIN*:** *1989 00*

## 0403-16

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Low NOx burner development for power plants**

To develop & install low NOx burners on Canadian power plants

Financing/*Financement:* Energy, Mines & Resources Canada

Ontario Hydro

$5 000 000

**START/*DÉBUT*:** *1979* **END/*FIN*:** *1990 00*

## 0403-17

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology (EMR)

**Demonstration of furnace injection of sorbent at the Camp Gagetown heating plant**

To demonstrate a cost effective emission technology.

Financing/*Financement:* Energy, Mines & Resources Canada

$2 700 000

**START/*DÉBUT*:** *1982* **END/*FIN*:** *1988 00*

## 0403-18

Loeks, D
(403) 633-5470

Sundog Resources

**Competing interests on agricultural lands**

Clarify land use conflicts and devise a range of options for resolving resource conflicts in farm land disposition and in farm land management.

Financing/*Financement:* Yukon Department of Renewable Resources

$25 000

**START/*DÉBUT*:** *1986 05* **END/*FIN*:** *1987 04*

## 0403-19

Malldry, C
(514) 488-8317

Université de Montréal; Département des sciences économiques

**Un modèle économique du contrôle de la pollution de l'eau par le biais d'un marché de permis.**

Améliorer des modèles économiques du contrôle de la pollution de l'eau sur le plan théorique, afin de les rendre plus réalistes et plus rigoureux. Test d'un modèle de simulation avec données sur la rivière St-Maurice avec la collaboration du ministère de l'Environnement (contact Jacques Gagnon). Un rapport du projet sera présenté en guise de conférence aux assises de l'AQTE en mars 1988.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Conseil de recherches en sciences humaines

$20 500 **END/*FIN*:** *1988 03*

## 0403-20

Meredith, T
(514) 398-4218

Université McGill; Département de géographie

**Study of environmental capability in Canadian industry**

The objective of this research is to gather information about the environmental intentions and capabilities of large resource-based and manufacturing industries in Canada. A representative selection of large resource-based and manufacturing industries in Canada will be investigated to determine the present state of 'environmentalism' in corporations. The specific objectives are: a) to determine the number and competence of individuals involved in environmental work; b) to determine approximate expenditures on environmental work; c) to determine the focus and priorities of environmental workers within companies; d) to determine the degree of liaison between industries and (i) research scientists, (ii) colleagues in cognate industries, and (iii) goverment environmental protection people.

Financing/*Financement:* Conseil de recherches en sciences humaines

$36 209

**START/*DÉBUT*:** *1986 07* **END/*FIN*:** *1989 05*

## 0403-21

Nestman, E
(416) 338-6444

Cantox Inc.

**Review of established regulatory policies using genotoxicity tests, current capability, and recommendations for future development**

Review and assess the usage of mutagenicity and genotoxicity test procedures by various regulatory bodies, with specific emphasis on the existing mandate of MOE. To address: current use of genotoxicity testing by governmental and regulatory jurisdictions nationally and internationally; critical review of the applicability of such tests for environmental decision making: compilation of an Index of short-term genotoxicity tests for regulatory decision making; summary of existing MOE testing capabilities; recommendations for future developments and estimates of associated costs for maintaining and developing further testing capabilities in MOE programs; development of an implementation plan of genotoxicity testing in the area of environmental management.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$48 000

**START/*DÉBUT*:** *1989 07* **END/FIN:** *1990 06*

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## 0403-22

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snow management and snowmelt infiltration**

To determine tillage methods to enhance snowmelt infiltration; meltwater infiltration into cracked soils; and effect of tillage practices on surface run-off and groundwater recharge.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

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## 0403-23

Phillips, W
Adamowicz, W
(403) 492-4228

University of Alberta; Department of Rural Economy

**An empirical assessment of the recreational value of wildlife resources in Alberta**

The objective of this project is to estimate use and non-use values of wildlife in Alberta, including the effect of risk on wildlife values.

Financing/*Financement:* Recreation, Parks & Wildlife Foundation (Alberta)

$19 000

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1989 07*

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## 0403-24

Pinault, P
(819) 953-1121

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Modifications to CANSIM computer model for Canadian power utilities**

Maintain up to date capability to analyze emission control options available to Canadian power utilities & their costs.

Financing/*Financement:* Environment Canada, Conservation & Protection

$300 000

**START/*DÉBUT*:** *1982* **END/FIN:** *1992 00*

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## 0403-25

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Nashwaak River break-up**

Establish the meteorological, hydraulic and hydrometric conditions that control break-up and ice jamming on the Nashwaak River, New Brunswick.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

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## 0403-26

Prowse, T
(306) 975-5737

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Economic significance of river ice jams**

To determine the economic significance to the Canadian economy of damage resulting from river ice jams.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *1991*

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## 0403-27

Robinson, J
(519) 885-1211

University of Waterloo

**Modelling municipal water systems for demand management**

It is proposed to develop a computer model that will enable policies for water demand management to be evaluated. Such policies will include economic incentive policy instruments such as water rate structure, water rate level and wastewater surcharges. The model will be designed so that comparisons can be made between the cost effectiveness of demand management approaches to the supply management approach. The model will be useful for forecasting water prices, timing of supply system expansions, etc.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$52 600

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1991 08*

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## 0403-28

Shaw, T
(416) 688-5550

Brock University; Dept. of Geography

**An assessment of landuse impact on the microclimate of the Fonthill Kame**

The principal objective of this study is to provide a detailed assessment of the Kame's microclimate in terms of its spatial variations in temperature, noting in particular evidence

of the depth and rate of cold-air drainage on a variety of slopes under radiation frost conditions. Apart from providing the necessary information on the microclimate variations on the Kame, which to date are poorly understood, this aspect of the study could identify specific areas of the Kame where the application of numerical modelling studies will have a reasonable chance of showing significant results.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$30 500

**START/*DÉBUT***: *1989 08* **END/FIN**: *1991 07*

## 0403-29

Sherbin, G
(416) 973-1098

Environment Canada; Environmental Protection

**Anaerobic treatment for BOD and toxicity reduction in pulp and paper wastewaters**

To provide data on the best available technology economically achievable for the pulp and paper sector, which will be used in the development of the effluents limits regulation.

Financing/*Financement:* Ontario Ministry of Environment

$733 000

**START/*DÉBUT***: *1987 00* **END/FIN**: *1990 00*

## 0403-30

Speirs, G
(416) 336-4745

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Energy savings in automated full scale activated sludge systems**

To demonstrate energy savings and improved control through the incorporation of automated process control. Report available in 1988.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Department of Supply and Services Canada

United States Environmental Protection Agency

Regional Municipality of Waterloo

$1 089 000

**START/*DÉBUT***: *1982 00* **END/FIN**: *1988 03*

## 0403-31

Speirs, G
(416) 336-4745

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Wastewater treatment plant automatic process control**

To improve operational control at wastewater treatment plants. Project reports for Phase 1 available 1983, SCAT-12; Storm Flow Control available 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1982 00* **END/FIN**: *1988 03*

## 0403-32

Swanton, C
(519) 824-4120

University of Guelph; Crop Science Department

**Integrated weed management for white beans (Phaseolus vulgaris)**

Lack of weed control in white beans can result in yield losses of up to 70%. Work in 1986 and 1987 showed that total pesticide use could be reduced by as much as 60% by selective placement of herbicide in bands. Along with cultivation practices, cost savings to average grower may be $30-85 per hectare. Work in 1988 dealt with weed control on 3 unlicenced cultivars: OAC Gryphon, OAC Sprint and OAC 87-2, planted in wide, medium and narrow rows. Work in 1989: Evaluate cultivar, row spacing and seed rate on weed density. Determine relationship between weed density and bean yield. Develop an economic threshold model for post emergence weed control in white beans.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$41 000

**START/*DÉBUT***: *1987 00* **END/FIN**: *1990 00*

## 0403-33

Thomson, C
(416) 688-5550

Brock University; Dept. of Geography

**Recreational corridors in regional Niagara**

To map all natural and man-made recreational attractions, facilities etc., and to identify the major corridors in which the major features may be found.

Financing/*Financement:* Brock University

## 0403-34

Tollefson, E
(403) 220-5754

Department of Chemical & Petroleum Engineering; University of Calgary

**Oxidation of low concentrations of hydrogen sulfide in natural gas over activated carbon catalysts**

The objective was to remove hydrogen sulfide in low concentrations from natural gas by oxidation with air using an activated carbon catalyst. The hydrogen sulfide is converted to sulfur and water which can readily be collected, the sulfur being a saleable product.

Financing/*Financement:* Canadian Gas Processor's Association

Natural Sciences and Engineering Research Council

$35 000

**START/*DÉBUT***: *1983 06*

## 0403-35

Tsang, G
(416) 336-4622

Rivers Research Branch; National Water Research Institute; Environment Canada

**River environmental and ice studies**

To better understand the physical characteristics of bubble plumes and their biological affects when used in an aquatic environment. To develop a basic understanding of the early formation and properties of river ice (frazil and anchor ice) and its bio-chemical effects. To investigate the bio-chemical degradation of toxic substances in rivers for better river environmental management.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Hydro

$200 000

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1991 01*

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## 0403-36

Wardle, D
(416) 739-4632

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Solar energy research**

Conduct research on solar radiation, build irradiance data bases and apply knowledge gained to facilitate the utilization of solar energy resources.

Financing/*Financement:* Panel on Energy Research and Development

**START/*DÉBUT***: *1977 04* ***END/FIN***: *ongoing*

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## 0403-37

Wardle, D
(416) 739-4632

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**RAGS observatory**

To conduct long-term operation of an early warning system for climatic change. Radiation changes in 10-12 micron should precede any climatic warming by several decades.

Financing/*Financement:* Panel on Energy Research and Development

**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

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## 0403-38

Whitney, J
(416) 978-4977

University of Toronto

**GIS for soil erosion in northern China**

A GIS management approach to control soil erosion.

Financing/*Financement:* Canadian International Development Agency

$510 000

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1991 04*

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## 0403-39

Wilcock, A
(519) 824-4120

University of Guelph

**Recycling of textile dyebath effluents**

To test the efficiency of a new, commercially available electrochemical cell in the purification of environmentally hazardous textile dyebath effluents. These effluents contain expensive dyes and other chemicals that, if they can be precipitated from the effluent and reused, represent a substantial economic saving. The colourless supernatant will be tested for biological toxicity and for potential industrial recycling so that manufacturers will have the option of safely discharging the treated effluent to sewers or recycling it in industrial applications.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$49 900

**START/*DÉBUT***: *1988 06* ***END/FIN***: *1991 05*

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## 0403-40

Wilman, E
(403) 288-7677

Department of Economics; University of Calgary

**Recreation benefits estimation for three areas in Alberta**

To use the travel cost model for recreation benefit estimation and test the sensitivity of these estimates. To develop a set of generic recreation values that will be of use to planners & managers in: i) Alberta's integrated resource management system, ii) resource agencies involved in recreation valuation, such as Alberta Public Lands, Alberta Forest Service, & Alberta Fish & Wildlife. For final report contact address under comments.

Financing/*Financement:* Alberta, Forestry Lands and Wildlife

$15 429

**START/*DÉBUT***: *1986 11* ***END/FIN***: *1987 05*

# 05

# WASTES

*DÉCHETS*

## 0500-1

Berkes, F
(416) 688-5550
Institute of Urban and Environmental Studies; Brock University

**A computer based environmental archive on waste management**

To collect references on waste management, including items related to the Ontario Waste Management Corporation (OWMC), and make them available through a microcomputer-based system.

Financing/*Financement:* Social Sciences & Humanities Research Council

$30 000

**START/*DÉBUT***: *1986 06*

## 0500-2

Blakeman, W
Paine, P
(819) 953-1105
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of status and environmental implications of emerging advanced coal cleaning technologies**

To identify emerging advanced physical, chemical and biological coal cleaning technologies in U.S., Canada and world wide. To identify and assess their commercialization potential and the environmental implications of the processes themselves vis à vis their effectiveness in reducing SO2 emissions from U.S. and Canadian combustion sources.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Conservation and Protection

$200 000

**START/*DÉBUT***: *1986 12* **END/*FIN***: *1991 06*

## 0500-3

Boadway, J
(613) 545-2122
Department of Civil Engineering; Queen's University

**Grit Removal at Sewage Treatment Plants Using a Low Pressure Hydrocyclone**

To develop a low pressure and efficient hydrocyclone suitable for grit removal from raw sewage.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$27 000

**START/*DÉBUT***: *1985 06* **END/*FIN***: *1987 10*

## 0500-4

Bomke, A
(604) 228-6534
University of British Columbia

**Combumat**

none available

Financing/*Financement:* Pollution Prevention Corp.

## 0500-5

Campbell, H
(416) 336-4717
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Assessment of integrated sludge management systems**

To develop a methodology to define cost effective integrated sludge management options. Final report available.

Financing/*Financement:* Panel on Energy Research and Development

Industry

$95 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1987 00*

## 0500-6

Clark, M
(604) 387-9947
British Columbia Ministry of Environment & Parks

**Determination of species of selenium**

Methods for the determination of selenite and selenate were developed for clean water samples using ion chromatography. Samples containing quantities of sulphate or chloride can not be analysed. The method MDC is estimated to be 0.05 mg/L.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0500-7

Dalrymple, R
(613) 545-6172
Geological Science; Queen's University

**Comparative sedimentology of sand and mud dominated macrotidal estuaries, Bay of Fundy, Nova Scotia**

unavailable

Financing/*Financement:* Imperial Oil Company

$16 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1987 00*

## 0500-8

Evans, R
(705) 748-1273
Environment & Resource Studies; Trent University

**Technical expertise to develop/apply sediment/soil bioassays**

none given

Financing/*Financement:* Ontario Ministry of Environment

$53 685

**START/*DÉBUT***: *1988 04*

## 0500-9

Fleet, B
(416) 978-3566
University of Toronto; Department of Chemistry

**Economic Factors Relating to Resource Recovery and Recycling for Heavy Metal Generating Industries**

The study will provide an evaluation of the economics of recycling technologies specifically aimed at some key industrial sources of pollution, namely the metal finishing, printed circuit board and related electronic industries. The concepts, technologies and systems should also be transferrable to a significant segment of Ontario's mining industry.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$76 500

**START/*DÉBUT***: *1987 04*

## 0500-10

Lega, R
(416) 235-5756
Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Routine method for Analysis of Resin and Fatty Acids for the Paper and Pulp Industry**

To provide a routine method for the analysis of resin and fatty acids, targeting on the parameters required for MISA Paper and Pulp Industry.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$21 000

**START/*DÉBUT***: *1987 03*

## 0500-11

Mavinic, D
Atwater, J
(604) 228-4752
University of British Columbia

**Environmental engineering instrumentation facility**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0500-12

Mavinic, D
Oldham, W
(604) 228-4752
University of British Columbia

**Atomic absorption spectrophotometer (AAS)**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0500-13

McIver, B
(514) 632-9910
Nova Pb Inc.

**Processing Noranda smelter dust through a rotary kiln to produce acceptable products**

To demonstrate the technical and economic viability of processing Noranda smelter dusts through Nova Pb Inc.'s rotary kiln to produce acceptable products (lead-silver bullion, copper matte, arsenic speiss, zinc-cadmium fume). Final report in printing; available May 1989.

Financing/*Financement:* Panel on Energy Research and Development

Nova Pb Inc.

$410 427

**START/*DÉBUT***: *1986 12* **END/*FIN***: *1988 03*

## 0500-14

Novakowski, K
(416) 336-4610
Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in fractured rock**

Investigate the controls on the velocity and dispersion of contaminants in fractured rock.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$150 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1991 03*

## 0500-15

Quigley, R
(519) 661-3344
University of Western Ontario; Department of Civil Engineering

**Miscellaneous industrial contracts mostly on domestic waste landfill liner problems**

Clay/leachate compatibility and field control of leachate migration.

Financing/*Financement:* Industry

$75 000

## 0500-16

Quigley, R
(519) 661-3344

University of Western Ontario; Department of Civil Engineering

**Domestic and industrial leachate/clay compatibility**

Design and monitoring of barrier systems including clays, slurry walls and artificial membrane liners. Paper and reports available on request from Geotechnical Research Centre.

Financing/*Financement:* Natural Sciences and Engineering Research Council

$280 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1994 03*

## 0500-17

Ricketts, P
(902) 420-5740

St. Mary's University

**Resource & environmental data base & information mapping & atlas for Gulf of Maine, marine region**

Prepare an electronic and atlas format database of existing information on the marine features and resources of the Gulf of Maine, Bay of Fundy and Georges Bank areas.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

Council of Maritime Premiers

Nova Scotia Department of Fisheries

$222 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1990 03*

## 0500-18

Rutherford, G
(613) 545-6032

Geography; Queen's University

**Effects of sewage sludge on soils and plants in the Kingston area**

unavailable

Financing/*Financement:* Queen's University

$2 000

**START/*DÉBUT***: *1984 11* ***END/FIN***: *1985 10*

## 0500-19

Ryma, B
(306) 787-6191

Saskatchewan Environment and Public Safety; Air and Land Protection Branch

**Saskatchewan's guidelines for the use of sewage sludge on agricultural lands**

To develop guidelines that could be used to ensure that when municipal sewage sludge is applied to agricultural land it is done so in a beneficial and environmentally acceptable manner. A draft report was prepared in June, 1987. Copies have been distributed for review and comment. A final report will be available the first quarter of 1988.

Financing/*Financement:* Saskatchewan Environment and Public Safety

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1987 06*

# HAZARDOUS WASTES AND MATERIAL

# *PRODUITS ET DÉCHETS DANGEREUX*

## 0501-1

Armour, M
(403) 492-5566

University of Alberta; Department of Chemistry

**Recycling and disposal of chemical wastes**

To develop and test in the laboratory methods for the recycling, spillage and waste disposal for small quantities of surplus and waste chemicals, and to document the methods. The results are presented in two manuals: Hazardous Chemicals Information & Disposal Guide; and Potentially Carcinogenic Chemicals Information & Disposal Guide, both by M.A. Armour et al. They are available from Terochem Laboratories Ltd., Box 8188, Station F, Edmonton, Alberta T6H 4P1.

Financing/*Financement:* Alberta Community & Occupational Health

Alberta Environmental Research Trust

Alberta Heritage Foundation for Medical Research

$345 350

**START/*DÉBUT***: *1982 09*

## 0501-2

Badakhshan, A
(403) 220-4799

Chemical & Petroleum Engineering Dept.; University of Calgary

**Concern and criteria for siting hazardous waste facilities**

To develop the best criteria for siting hazardous waste facilities through analysing relevant issues.

Financing/*Financement:* Environment Canada, Conservation & Protection

University of Calgary

$30 000

**START/*DÉBUT***: *1986 11* **END/FIN**: *1988 09*

## 0501-3

Baker, R
(819) 953-1693

Environment Canada; Conservation & Protection; Management of Emergencies Branch

**Evaluation of the sediment quality triad approach to monitoring the degradation of sediment by contaminants**

The investigation of the physical, chemical and biological effects of dredging and dumping of contaminated sediments. To develop the 'triad approach' to effects monitoring for routine application in Canada, wherever toxic sediment has been or could become a serious problem.

Financing/*Financement:* Environment Canada, Conservation & Protection

Federal Environmental Assessment Review Office

Department of Fisheries & Oceans Canada

$55 000

**START/*DÉBUT***: *1989 09* **END/FIN**: *1990 06*

## 0501-4

Barchard, W
(902) 426-8301

Environment Canada; Conservation & Protection

**Release of oil-based drilling fluids & oily cuttings into the Canadian Northwest Atlantic**

Laboratory and field evaluations of long and short-term environmental effects of oil-based muds and contaminated cuttings. Both diesel oil and naphthenic and parafinic alternates were evaluated.

Financing/*Financement:* Panel on Energy, Research & Development

Environment Canada, Conservation & Protection

Environment Canada, Conservation & Protection

$75 000

**START/*DÉBUT***: *1983 02* **END/FIN**: *1987 03*

## 0501-5

Bardecki, M
Banting, D
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Preparation of a methodology for identification of former industrial sites**

Creation of an archival search method for identifying potentially hazardous former industrial sites. Report prepared.

Financing/*Financement:* Ontario Ministry of the Environment

Social Sciences and Humanities Research Council

$6 988

**START/*DÉBUT***: *1982 05* **END/FIN**: *1982 09*

## 0501-6

Barker, J
(519) 885-1211

University of Waterloo

**Bias due to sampling groundwater and surface water for trace organic contaminants**

To evaluate the bias introduced by various practical sampling systems when sampling volatile organics and dissolved gases from gas-charged waters. To improve the above sampling systems where possible to minimize sampling bias. To evaluate the bias introduced by sorption of hydrophobic organics (PCB's and PAH's for example) by monitoring well and sampling materials, specifically nylon, teflon (R), rigid PVC and polyethylene. To develop a scientifically valid method to predict the sorptive loss of various hydrophobic organics onto various materials encountered in sampling surface and groundwater.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$46 700

**START/*DÉBUT***: *1989 06* ***END/FIN***: *1990 05*

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## 0501-7

Beveridge, T
(519) 824-4120

Department of Microbiology; University of Guelph

**Heavy metal immobilization by bacteria and their products: biomineralization**

To study the fundamental interactions of bacteria with soluble toxic heavy metal ions and the resulting biomineral which is formed.

Financing/*Financement:* Natural Sciences and Engineering Research Council

United States Environmental Protection Agency

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## 0501-8

Bulman, T
(416) 336-4664

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Biological degradation of chlorinated organics in soil systems**

To determine whether biological degradation can be managed to decontaminate soil containing chlorinated organic compounds. Report available.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1986* ***END/FIN***: *1989 03*

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## 0501-9

Bulman, T
(416) 336-4664

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Land application of industrial wastes**

To determine the fate and treatability of industrial waste constituents through application to soil. Papers available from T. Bulman.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Industry

Great Lakes Water Quality

$630 000

**START/*DÉBUT***: *1982* ***END/FIN***: *ongoing*

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## 0501-10

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of free cyanide from photolysis of waste waters**

Techniques have been developed for studying the release of free cyanide, under natural conditions, from waste water samples. These samples which contain metal-cyanide complexes are non-toxic to fish in laboratory bioassays, but exhibit a rapid release of cyanide in summer sunlight. Chemical species involved in this photolysis can now be measured directly and rapidly by ion chromatography.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

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## 0501-11

Clulow, V
(705) 675-1151

Laurentian University; Biology

**Radionuclides in fish, water, and sediments of lakes near Elliot Lake Ontario**

Measurement of Ra, Po, Pb, Th, U in tissues of fish and calculation of transfer parameters from environment and risk to human consumers. To be published as AECB report.

Financing/*Financement:* Atomic Energy Control Board

**START/*DÉBUT***: *1989 07* ***END/FIN***: *1989 12*

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## 0501-12

Clulow, V
(705) 675-1151

Laurentian University; Biology

**Radionuclides in mammals associated with uranium tailings**

To study occurrence and movements of Ra-226 in vegetation and aquatic mammals in the region of Elliot Lake, Ontario; calculation of concentration factors - transfer coefficients. Report available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

Laurentian University Research Fund

$19 450

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1987 07*

## 0501-13

Clulow, V
(705) 675-1151
Laurentian University; Biology

**Study of radionuclide uptake by beaver and grouse in the Serpent River Basin**

To study the occurrence and movements of Ra-226 in water, vegetation, aquatic mammals and game birds in the region of the Serpent River Basin; calculation of transfer coefficients. Report available Dec. 1988, pp 55 plus appendices.

Financing/*Financement:* Atomic Energy Control Board
$55 000
**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 04*

## 0501-14

Conrad, D
Neuwirth, M
(403) 632-6761
Alberta Environmental Centre

**Immobilization of hazardous heavy metal wastes with chemically bonded ceramics cement**

Evaluation and development of analytical methods (TEM, SEM) to characterize metal containment, evaluate raw materials (cement, flyash), investigate the mechanisms of metal containment and develop commercial processes.

Financing/*Financement:* Alberta Environmental Centre
Canada Centre for Mineral & Energy Technology (EMR)
University of Alberta
Alberta Research Council
**START/*DÉBUT*:** *1987 10*

## 0501-15

Constable, T
(416) 336-4716
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Toxics identification and mobility in sludges**

To develop a database on toxics accumulation and mobility in sludges and to provide technical support to other C&P groups. Reports have been made to the various regions on specific tasks.

Financing/*Financement:* Environment Canada, Conservation and Protection
Great Lakes Water Quality
Panel on Energy Research and Development
$215 000
**START/*DÉBUT*:** *1980* **END/FIN:** *ongoing*

## 0501-16

Côté, P
(416) 336-4605
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Assessment of solidification technology**

To evaluate existing solidification processes and to use a modelling approach to predict leaching of solidified wastes in a field environment. Papers available from P. Côté.

Financing/*Financement:* Environment Canada, Conservation and Protection
Industry
$362 000
**START/*DÉBUT*:** *1982* **END/FIN:** *ongoing*

## 0501-17

Côté, P
(416) 336-4605
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Test methods for solidified waste characterization**

To standardize test methods for the characterization of solidified waste and to develop a solidified waste characteristics data base. Papers are available.

Financing/*Financement:* Environment Canada, Conservation and Protection
Petro Canada
$200 000
**START/*DÉBUT*:** *1984* **END/FIN:** *ongoing*

## 0501-18

Danylewych-May, L
(416) 675-3870
Barringer Magenta Limited

**To develop the GC/MED System as Non GC/MS Screening Technique**

To assess the GC/MED analytical system as a non GC/MS technique for the determination of C, C1, Br, F, P, and S in hazardous waste and its application for the analysis of volatile and non-volatile contaminants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$63 000
**START/*DÉBUT*:** *1986 04* **END/FIN:** *ongoing*

## 0501-19

Désy, J
Dufour, J
(418) 545-5346
Université du Québec à Chicoutimi; Département des sciences humaines

**Guide cartographique régionalisé des stress environnementaux au Québec.**

De très nombreuses sources d'information factuelles existent sur la distribution spatiale des stress environnementaux, des espaces conservés et à conserver sur le territoire québécois. Malheureusement, ces informations sont fragmentées, éparses, peu accessibles dans bien des cas, sinon soigneusement cachées. Ces synthèses cartographiques régionales veulent pallier à ces lacunes en fournissant une information de qualité scientifique, accessible et vulga-

risée aux citoyen-nes, tout en contribuant à la formation de stratégies régionales de conservation.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science

Canada, ministère de l'Environnnment

Confédération des syndicats nationaux

$123 000

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1989 05*

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## 0501-20

Dibbs, H
(819) 953-1187

Environment Canada; Conservation and Protection; Technology Development Branch

**Performance monitoring of the Swan Hills Hazardous Waste Incinerator using surrogate compounds**

To investigate the use of sulphur hexafluoride and a chlorinated fluorocarbon to provide a continuous, reliable and economical means of determining the destruction efficiency of the Swan Hills incinerator. Final report available, March 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

Alberta Environment

Alberta Special Waste Management Corporation

British Columbia Ministry of Environment and Parks

$125 000

**START/*DÉBUT*:** *1988 03* **END/*FIN*:** *1988 09*

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## 0501-21

Dibbs, H
(819) 953-1187

Environment Canada; Conservation and Protection; Technology Development Branch

**The evaluation of mobile and stationary facilities for the destruction of PCBs**

Up-to-date evaluation of the current status of PCB destruction facilities for their application in Canada. Published as an Environment Canada report, EPS 3/HA/5, May 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

$10 000

**START/*DÉBUT*:** *1987 07* **END/*FIN*:** *1988 03*

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## 0501-22

Farquhar, G
McBean, E
(519) 885-1211

Department of Civil Engineering; University of Waterloo

**Behaviour, detection and control of hazardous immiscible liquid movement in soil**

To conduct laboratory scale experiments to study the movement, retention and control of hazardous immiscible liquids (HIL) in soil.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$172 700

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

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## 0501-23

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Reverse osmosis treatment of pesticide residues**

To evaluate present reverse osmosis technology as a method to concentrate pesticide residues. Report available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$7 800

**START/*DÉBUT*:** *1986 10* **END/*FIN*:** *1987 04*

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## 0501-24

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Pesticide container disposal site assessment project**

The ultimate objective of the project was to ensure the continuing integrity of the pesticide container collection sites across the province. The specific objectives were to determine the extent of contamination and examine the physical characteristics and operational practices of each site. Summary report is available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$45 000

**START/*DÉBUT*:** *1986 01* **END/*FIN*:** *1987 01*

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## 0501-25

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Décomposition de l'arsénopyrite aurifère par thiobacillus ferrooxydans.**

Récupération de métaux précieux à partir de minerais réfractaires (arsénopyrite) et confinement des espèces toxiques (arsenic et scorodite) pour en disposer d'une manière sécuritaire.

Financing/*Financement:* Fonds personnel

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## 0501-26

Halfon, E
(416) 336-4917

Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling the fate of contaminants in Lake Ontario in the Toronto waterfront area - environmental simulation**

Finish work on modelling toxic contaminants in the Toronto waterfront, report due in the fall of 1989. Model of toxic contaminants in Lake Ontario. Continue work on the development of an expert system for ranking, this requires assistance of contract computer programmers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment, Municipal Industrial Strategy for Abatement

Great Lakes Water Quality

$200 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0501-27

Hallman, E
Lamonthe, E
(705) 675-1151

Laurentian University; Physics and Astronomy

**Radioisotope activities in vegetation from uranium mining areas by alpha spectroscopy**

To survey the use of mosses and lichens in monitoring the presence of radioisotopes near uranium mining and milling operations. M.Sc. Thesis available.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Laurentian University Research Fund

$6 500

**START/*DÉBUT***: *1983 09* ***END/FIN***: *1986 07*

## 0501-28

Harvey, K
(204) 753-2311

Atomic Energy Research Laboratories

**Glassification and leachability of hazardous waste residues**

To make a first estimate of the value of immobilizing hazardous waste materials and residues in a silicate glass matrix. If the resulting concentrations or rates of release into simulated groundwaters are significantly reduced when compared with conventional methods for immobilization, this could form the basis for the development of low- or controlled-release waste forms, and of novel means for the treatment and disposal of hazardous wastes. Output: Interim Report August 1988. Interim Report February 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$61 800

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0501-29

Hayes, M
Ferguson, H
(519) 823-8800

Department of Pathology; University of Guelph

**The significance of neoplasia in wild fish populations**

To determine the role of environmental pollutants on the pathogenesis of skin and liver tumors in bottom dwelling fish in Lake Ontario and other polluted regions of the Great Lakes. To determine the relationship between carcinogen susceptibility of affected and non affected fish, with carcinogen susceptibility of terrestrial mammals.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1985*

## 0501-30

Houston, A
(416) 688-5550

Brock University; Dept. of Biological Science

**Effects of chronic exposure to sublethal levels of heavy metal pollutants on physiological/biochemical activities of freshwater fishes**

Definition of maximal acceptable pollutant concentrations

Financing/*Financement:* Natural Sciences & Engineering Research Council

$36 382

## 0501-31

Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Technology assessment and development for petroleum product storage, OILSPILLS pipeline leak sensor**

Development of an airborne remote pipeline oil leak sensing device. Interim reports are available from EPS NWT District Office in Yellowknife.

Financing/*Financement:* Panel on Energy Research and Development

$375 000

**START/*DÉBUT***: *1983 09* ***END/FIN***: *1987 03*

## 0501-32

Hubbard, L
Keshvani, K
not available

British Columbia Ministry of Environment & Parks; Environmental Safety Program

**Collection and disposal of hazardous wastes from small quantity generators in Canada**

The project will identify small quantity generators, develop an inventory of wastes, examine management options and recommend economically and technically feasible management programs. A comprehensive report summarizing the results will be available on completion.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

**START/*DÉBUT***: *1988 06*

## 0501-33

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Development of a new process for removal of radium-226 from uranium tailings decants**

The objective of this project is to develop a new fluidized-bed process for the removal of radium-226 from uranium tailings decants. More specific objectives include optimization of the process to achieve an effluent radium-226 activity level of 10 pCi/L (0.37 Bq/L) at bench scale; construction & testing at pilot scale to confirm scale-up & obtain data

for design of a full scale process; and to determine equipment requirements and costs for full scale processes.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Amok Ltd./Cluff Mining

$309 895

**START/*DÉBUT*:** *1984 03* **END/FIN:** *1988 09*

## 0501-34

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Leachability of Radium-226 from barium-radium sulfate sludges**

The objective of this project was to examine the leachability of 226Ra2+ from barium-radium sulfate sludges. The study included an elemental analysis of these sludges, geochemical modelling of the leaching of radium and microbiological experiments to investigate sludge solubilization.

Financing/*Financement:* Department of Supply and Services Canada

$75 000

**START/*DÉBUT*:** *1984 03* **END/FIN:** *1985 09*

## 0501-35

Jacobs, H
(416) 979-5000

Ryerson Polytechnical Institute

**Relic waste sites in the City of Toronto**

To identify and map the threat posed by historical waste disposal practices to elementary schools. Presentations of results to Public Health Committee and to School Boards.

Financing/*Financement:* Toronto (City of) Environmental Protection Office

**START/*DÉBUT*:** *1989 02* **END/FIN:** *1989 04*

## 0501-36

Joshi, S
(416) 336-4573

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sedimentary transport of radionuclides in the Great Lakes with special reference to Lake Ontario**

To investigate the role of suspended sediment in the transport of radionuclides in Lake Ontario; investigate the influence of AECL-derived radionuclides on Ottawa River/St. Lawrence River; characterize and inventory the sedimentary radionuclide reservoir.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0501-37

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Structure activity relationships of contaminants**

Determine toxicity data (microtox) of contaminants and develop structure activity equations.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0501-38

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants in Great Lakes system**

To identify sources, pathways and sinks of organic trace contaminants in Great Lakes system including St. Lawrence estuary.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$750 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1993 03*

## 0501-39

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Demonstration of membrane cleanup technology in the Atlantic Region**

Treat contaminated water streams using ultrafiltration and reverse osmosis at selected sites in New Brunswick and Nova Scotia.

Financing/*Financement:* Environment Canada, Conservation & Protection

$25 000

**START/*DÉBUT*:** *1989 10* **END/FIN:** *1989 11*

## 0501-40

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Pervaporation as an environmental emergency countermeasure**

To investigate pervaporation for spill and leachate amelioration. Laboratory scale studies were followed by the design and construction of a mobile prototype and additional work is being performed to fine tune the unit.

Financing/*Financement:* Environment Canada, Conservation & Protection

$180 000
**START/*DÉBUT***: *1987 10* ***END/FIN***: *1990 03*

## 0501-41

Kosaric, N
(519) 661-3119
University of Western Ontario; Dept. of Chemical & Biochemical Engineering

**Research projects in biochemical and food engineering**

Projects include: anaerobic sludge granulation process treatment of industrial wastewaters in a pilot plant for treatment of pulp and paper wastes - study hydrodynamic conditions affecting performance of UASBRs; detoxification of industrial wastewaters with algae - removal and degradation of chlorinated hydrocarbons and develop a novel photobioreactor system with internal reactor illumination; breaking industrial emulsions with specific microbes of particular interest in enhanced oil recovery and petroleum industry. Reports and publications are available with some restrictions.

Financing/*Financement:* Paques Lavalin
Natural Sciences & Engineering Research Council
$494 758
**START/*DÉBUT***: *1988 02* ***END/FIN***: *1991 01*

## 0501-42

Kushner, D
(613) 564-2437
University of Ottawa; Biology

**Microbial control of tailings dump leaching**

none given

Financing/*Financement:* Department of Supply & Services Canada
$62 166
**START/*DÉBUT***: *1985 10* ***END/FIN***: *1988 11*

## 0501-43

Laurin, M
(514) 652-8011
Institut de Recherche d'Hydro Québec

**Thermonic process**

1) To design, construct, install and operate a full-scale wastewater treatment process to treat 200, 000 L/day of metal finishing wastewater containing hexavalent chromium at concentrations of 26 mg/ L; 2) To recover chromium from the process in the form of commercial grade chromic acid. Final report received March 1989, under review.

Financing/*Financement:* Panel on Energy Research and Development
Ministere de l'Environnement du Québec
Institut de Recherche d'Hydro Québec
$96 980
**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 02*

## 0501-44

Liem, A
Pandompatam, B
(403) 632-6761
Alberta Environmental Centre

**Waste incineration research**

Support formulation and enforcement of regulatory satandards. Assist industry in meeting compliance cost-effectively. Transfer technology and disseminate information. Research areas include optimization of incinerating conditions, emission monitoring/ measurements, mechanisms of formation of trace organic compounds and quality assurance of trial burns. This is an in-house long term project utilizing the pilot, bench and lab-scale facilities and the associated air pollution control/monitoring systems that have been developed.

Financing/*Financement:* Alberta Environmental Centre
$4 000 000
**START/*DÉBUT***: *1984 04*

## 0501-45

Manna, B
(604) 387-9957
British Columbia Ministry of Environment & Parks

**Air sampling methods for new anti-sapstain chemicals**

To develop sampling methods for ambient air and emissions for two new anti-sapstain chemicals introduced in forest products industry of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks
$60 000
**START/*DÉBUT***: *1988 05* ***END/FIN***: *1989 05*

## 0501-46

Manna, B
(604) 387-9957
British Columbia Ministry of Environment & Parks

**PCP incineration study in the pulp mills of B.C.**

To determine the emission characteristics and impact on air quality including dioxins when PCP-treated wood wastes are incinerated in the power boilers. Report on the design and plan for the test burn is available.

Financing/*Financement:* British Columbia Ministry of Environment & Parks
Environment Canada, Conservation and Protection
$225 000
**START/*DÉBUT***: *1987 05*

## 0501-47

McGregor, I
(416) 279-5122
Anachemia Solvents Ltd.

**Demonstration of a system that combines solvent and heat recovery from residual organic wastes**

To design, construct, and operate an energy from waste facility that successfully disposes of industrial solvents and recovers energy in the form of steam. Study completed; fi-

nal report to be published by Environment Canada; spring 1989.

Financing/*Financement:* Panel on Energy Research and Development

Anachemia Solvents Ltd.

$720 000

**START/*DÉBUT*:** *1984 12* **END/*FIN*:** *1987 12*

## 0501-48

McKague, K
(519) 886-0520

Ecologistics Limited

**Monitoring and evaluation of landfill**

To continue uninterrupted monitoring of the existing six (6) lysimeters located at the Britannia Road Landfill site with an outlook to confirming the viewpoint that they are operational and will continue to function through the fall, winter, and spring.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$15 000

**START/*DÉBUT*:** *1988 10* **END/*FIN*:** *1991 09*

## 0501-49

Mooij, H
(416) 323-5160

Ontario Ministry of Environment; Waste Management Branch

**Landfill monitoring protocol development for Ontario**

To develop practicable recommendations to the Ministry of the Environment, based on expert concensus positions and documented present practices and procedures, for the development of landfill leachate and groundwater quality monitoring protocols and procedures.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$21 600

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1991 03*

## 0501-50

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants - water/air**

Assessment of the feasibility of habitat creation at confined disposal facilities as remediation of contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1992 03*

## 0501-51

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment toxicity and treatment methods in Hamilton Harbour**

To evaluate sediment toxicity and methods of reducing sediment toxicity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Ontario Ministry of Environment

$500 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1990 10*

## 0501-52

Neaves, W
(519) 686-7558

Enviroclean

**Chlorinated and nonchlorinated organics storage studies**

To provide the Ministry with a manual documenting the maximum storage times and conditions for which organic samples may be kept before analytical results become invalid. Conducting a comprehensive literature review of the stability of organic compounds during storage of environmental samples, contacting other agencies such as the U.S. EPA, Environment Canada, Canada Centre for Inland Waters, and academic researchers, to obtain unpublished and internal reports on the stability of organics in stored samples. Recommending storage times/conditions for organics monitored by MOE in various matrices including water, effluents, soil/sediments, air, vegetation and biota. Identifying areas in which additional research on the storage times and conditions for organic substances is needed.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$64 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1990 03*

## 0501-53

Packman, G
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Environmental studies design criteria**

1) To define natural variability of sediment physical/chemical parameters in the Beaufort Sea. 2) To determine optimum number of sample replicates for effective monitoring programs. 3) To test strategies and parameters for inclusion in monitoring guidelines.

Financing/*Financement:* Panel on Energy Research and Development

$154 300

**START/*DÉBUT*:** *1984 06* **END/*FIN*:** *1987 03*

## 0501-54

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Subsurface oil movement**

During a major east coast oil spill, oil was observed floating below the sea surface hampering the location & clean-up of the oil. To assess physical/chemical/oceanographic factors affecting oil submergence in order to be in a better position to predict such movement. Data from each year already published in EE-series. PERD No.67220.

Financing/*Financement:* Panel on Energy Research & Development

$200 000

**START/*DÉBUT***: *1986 11* ***END/FIN***: *1987 02*

## 0501-55

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Condensate effects study**

Following a gas well blowout on Scotrain Shelf marine organisms were found to uptake condensates. This study will look at potential tainting effects of condensates on an east coast molluscan species. Reports due in March 1988 & March 1989. PERD No.67238.

Financing/*Financement:* Panel on Energy Research & Development

$50 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1989 03*

## 0501-56

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Remote sensing chronic oil discharges**

Develop equipment suitable for remotely sensing chronic & major spillage from offshore oil production facilities. Data for previous years studies published in EE report series. PERD No.67206.

Financing/*Financement:* Panel on Energy Research & Development

$245 000

**START/*DÉBUT***: *1984 11* ***END/FIN***: *1988 05*

## 0501-57

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Use of sorbents to remove insoluble sunken liquid chemicals from waterways**

Laboratory phase studies completed in house and very successful.

Financing/*Financement:* Environment Canada, Conservation and Protection

$15 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1988 01*

## 0501-58

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Removal of PCBs from soil**

In house study now complete. New techniques now becoming available will be investigated in future.

Financing/*Financement:* Environment Canada, Conservation and Protection

$5 000

**START/*DÉBUT***: *1986 11* ***END/FIN***: *ongoing*

## 0501-59

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Butane stripping as an environmental emergency countermeasure**

To investigate butane stripping as an environmental emergency countermeasure and build a unit if the process is more capable and economic than steam stripping. Bench scale unit has been built and will be tested at River Road Labs. in 1990-91.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$252 218

**START/*DÉBUT***: *1987 08* ***END/FIN***: *1989 08*

## 0501-60

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Steam stripping as an environmental emergency countermeasure**

A feasibility study has been completed and a report written. A mobile pilot plant was constructed and will be tested in May 1990 at a groundwater site.

Financing/*Financement:* Environment Canada, Conservation & Protection

$240 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0501-61

Pyne, R
not available

R.L. Pyne Metallurgical Consultant

**Preliminary evaluation of metal recovery from wastes generated by the Ont. metal finishing industry**

Demonstrate on a laboratory scale that Ni-Cr sludges are amenable to a precipitate-flotation process which will produce marketable concentrates of metal for sale to Ontario industry.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Ontario Ministry of Environment

$40 300

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1988 04*

## 0501-62

Quigley, R
(519) 661-3344

University of Western Ontario; Department of Civil Engineering

**Field study of organics below a domestic waste site. Field study of phenol migration at a new site.**

Time/rate of diffusion of organics.

Financing/*Financement:* NSERC- Natural Sciences and Engineering Research Council

$70 080

**START/*DÉBUT***: *1987 12* **END/*FIN***: *1989 12*

## 0501-63

Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Toxicity testing development**

To develop, evaluate and establish a battery of short-term microbial tests for ecotoxicological assessment. Ongoing in-house project involving research and development and analytical services aspects.

Financing/*Financement:* Alberta Environment

Alberta Environmental Centre

**START/*DÉBUT***: *1984 04*

## 0501-64

Rao, S
(416) 336-4924

Rivers Research Branch; National Water Research Institute; Environment Canada

**Role of particulates in the transport and fate of contaminants in fluvial systems**

To define the role of suspended and sediment particles (organic aggregates/inorganic particles) in the downstream transport of contaminants and establish the active fractions. To evaluate the impact, fate and transport of tar sands, and urban contaminants on various river systems using microbiological activity tests.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

## 0501-65

Robb, A
not available

Canada Cement Lafarge

**Liquid wastes incineration in a cement kiln**

To report on the methods employed in gaining public acceptance for the design, testing and installation of a system for safe handling and burning of waste fuels. Final report received and under review.

Financing/*Financement:* Panel on Energy Research and Development

Canada Cement Lafarge

$1 090 000

**START/*DÉBUT***: *1982 12* **END/*FIN***: *1989 03*

## 0501-66

Roy, C
(418) 656-7406

Université Laval: Département de génie chimique

**Recyclage des résidus pétroliers par pyrolyse sous vide.**

Développer et expérimenter une Unité de Développement de Procédé dont le but est de transformer (par décomposition thermique sous vide) les résidus pétroliers provenant des usines de raffinage du pétrole en huiles recyclables directement dans le procédé de raffinage. Les résidus solides et secs résultant du traitement peuvent être par la suite enfouis sans danger pour l'environnement.

Financing/*Financement:* Ultramar Canada Inc.

Canada, ministère de l'Energie, des Mines et des Ressources

$580 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1991 05*

## 0501-67

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Recherche nouveau type de brasque**

Eliminer à la source la formation des CN dans la brasque.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$1 000 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1989 12*

## 0501-68

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Waste sludges produced by the Canadian natural gas processing industry**

To develop, validate and publish a cost-effective methodology for determining the characteristics and environmental significance of natural gas plant sludges. To examine all potential sludge treatment/ disposal options and associated cost implications. Final draft report is due March 1990.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Research Council

$540 000

**START/*DÉBUT*:** *1984 05* **END/FIN:** *1990 03*

## 0501-69

Smillie, R
(403) 632-6761

Alberta Environmental Centre

**Trace organic analysis and method development**

Trace organic analyses and method development is provided for enforcement of provincial statutes, and for support of applied research dealing with effective use, regulation and environmental impact of persistent organic chemicals.

Financing/*Financement:* Alberta Environment

Alberta Community & Occupational Health

Alberta Forestry Lands & Wildlife

## 0501-70

St-Germain, R
(514) 283-7309

Environnement Canada; Conservation et Protection

**Caractérisation d'un lieu de déversement accidentel d'hydrocarbures à Sainte-Angélique**

Evaluation d'impact et détermination de la nécessité d'entreprendre des mesures de correction. Travaux de restauration à entreprendre en 88/89.

Financing/*Financement:* Environnement Canada, Conservation et Protection

$30 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1988 03*

## 0501-71

Stairs, R
Lewars, E
(705) 748-1506

Department of Chemistry; Trent University

**Waste Management Planning for Pharmaceutical Industry**

1. To assess present practice and regulations, types and quantities of pharmaceutical wastes, storage, handling and disposal. 2. To recommend changes in practice or regulations, as appropriate. 3. To promote occupational and environmental safety and to effect economies, if possible.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$50 800

**START/*DÉBUT*:** *1985 11* **END/FIN:** *1989 04*

## 0501-72

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Air monitoring program for the Swan Hills special waste management facility**

To assess the background organic compounds in the vicinity of the proposed waste incineration site near Swan Hills prior to the operation of the facility. A report of the findings has been submitted to Western Research and subsequently to the Alberta Special Waste Management Corporation.

Financing/*Financement:* Western Research Division of Bow Valley Resources

Alberta Special Waste Management Corporation

$29 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1987 08*

## 0501-73

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Hazardous organic compounds in sediment in the Strait of Canso**

To assess various hazardous organic compounds, e.g. PAH and chlorinated compounds in the sediment of the Strait of Canso.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$6 000

**START/*DÉBUT*:** *1987 10*

## 0501-74

Telang, S
(403) 220-6375

Kananaskis Centre for Environmental Research; University of Calgary

**Environmental audit: Swan Hills monitoring program**

To review the reports on the baseline studies conducted at the Swan Hills landfill site. Five reports on air, soil, vegetation, groundwater, surface water, and aquatic biota were reviewed. Final report available from Chem-Securities Ltd., Calgary.

Financing/*Financement:* Chem-Securities Ltd.

**START/*DÉBUT*:** *1987 08* **END/FIN:** *1988 05*

## 0501-75

Tilden, D
Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**'Environmental Atlas for Beaufort Sea Oil Spill Response' by D.F. Dickens, et al for EPS, March 1987**

To provide environmental information relevant to the planning and implementation of year-round oil spill countermeasures in both coastal and offshore areas of the Beaufort

Sea. Final report is available free of charge while quantities last, from EPS - NWT District Office, P.O. Box 370, Yellowknife, NWT, X1A 2N3.

Financing/*Financement:* Northern Oil and Gas Action Program

$265 040

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 06*

## 0501-76

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Mobile reverse osmosis/adsorption system as an environmental emergency countermeasure**

A mobile system was developed and tested. Very good results were achieved on organic chemical contaminated leachates and surface water at a petrochemical distribution terminal. The system was used to clean up the aqueous residue from a pesticide warehouse fire in Canning N.S. Reports were presented at the 1987 Technical Seminar on Chemical Spills.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Dow Chemical Inc.

$280 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1987 07*

## 0501-77

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Investigation of a mobile solvent extraction system as an environmental emergency countermeasure**

To investigate the concept of a mobile system; design and construct the system.

Financing/*Financement:* Environment Canada, Conservation and Protection

$80 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1990 06*

## 0501-78

Willes, R
(416) 845-3872

Cantox Inc.

**Methodology for Assessing the Relative Environmental Hazards of Chemical Contaminants**

1. To provide an operational, peer-reviewed risk identification methodology for standard setting 2. To provide assessment criteria to evaluate the hazards of selected chemicals 3. To define the information gathering process for assessing the hazards of individual chemicals.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$200 000

**START/*DÉBUT***: *1985 08* ***END/FIN***: *1987 07*

## 0501-79

Willes, R
Orr, J
(416) 845-3872

Cantox Inc.

**Preliminary assessment of potential environmental hazards of biotechnology products and wastes**

Final report dated April 13, 1987 available.

Financing/*Financement:* Environment Canada, Conservation and Protection

$5 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1987 04*

## 0501-80

Wituschek, E
(604) 666-2815

Environment Canada; Conservation and Protection; Environmental Protection

**Test burn of chlorophenol contaminated wood wastes**

To characterize the emissions (chlorophenol, dioxin, furans), assess environmental impacts and develop emission and air quality criteria for the burning of wood wastes contaminated by chlorophenols. Tests were completed on Sept. 25, 1987. Report scheduled for July 1989.

Financing/*Financement:* Energy, Mines and Resources Canada

British Columbia Ministry of Environment and Parks

Environment Canada, Conservation and Protection

$210 000

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1987 09*

## 0501-81

Zeman, A
(416) 336-4882

Lakes Research Branch; National Water Research Institute; Environment Canada

**Cohesive sediment dynamics**

To apply and further develop a numerical model to determine the factor of safety against seepage erosion. To interpret sediment dynamics from geotechnical profiles of Lake Erie cores.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$60 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

# SOLID WASTE MANAGEMENT

# *GESTION DES DÉCHETS SOLIDES*

## 0502-1

Armour, M
(403) 492-5566

University of Alberta; Department of Chemistry

**Recycling and disposal of chemical wastes**

To develop and test in the laboratory methods for the recycling, spillage and waste disposal for small quantities of surplus and waste chemicals, and to document the methods. The results are presented in two manuals: Hazardous Chemicals Information & Disposal Guide; and Potentially Carcinogenic Chemicals Information & Disposal Guide, both by M.A. Armour et al. They are available from Terochem Laboratories Ltd., Box 8188, Station F, Edmonton, Alberta T6H 4P1.

Financing/*Financement:* Alberta Community & Occupational Health

Alberta Environmental Research Trust

Alberta Heritage Foundation for Medical Research

$345 350

**START/*DÉBUT***: *1982 09*

## 0502-2

Atwater, J
(604) 228-4694

University of British Columbia

**Generation and migration of landfill leachate**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0502-3

Barrington, S
(514) 398-7776

Collège MacDonald; Département de génie rural

**Le compostage d'amas solides de fumier de bovins, par recouvrement et aération.**

Vérifier si le compostage intervient lors de l'entreposage d'amas solides de fumier de bovins sous une couverture en géotextile tissé; l'aération journalière s'effectue au moment de l'évacuation des fumiers par voie souterraine, sous pression d'air.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0502-4

Bibeau, D
(514) 878-4801

Canadian International Paper Inc.

**Kamyr ring press for pulp and paper sludge dewatering**

To demonstrate an effective sludge dewatering system which will be applicable at pulp and paper plants across the country and which will reduce sludge incineration and disposal problems.

Financing/*Financement:* Panel on Energy Research and Development

Canadian International Paper

$1 081 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1988 07*

## 0502-5

Blakeman, W
(819) 953-1105

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental protection criteria - coal mining preparation (PERD project 24201)**

To identify sources of wastes, identify and quantify contaminants and identify and assess in place and potentially emerging pollution abatement technologies at Canadian coal mining and preparation facilities, with respect to liquid effluents, particulate and gaseous air emissions and the management of solid wastes.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$792 500

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1990 03*

## 0502-6

Boschieter, A
(416) 667-1711

Spider Recycling

**Evaluation of thermal screw press in multi waste recovery and recycle**

To evaluate and demonstrate the thermal screw press in recovering and recycling different industrial wastes.

Financing/*Financement:* Ontario Ministry of Environment

$134 000

**START/*DÉBUT***: *1988 07*

## 0502-7

Brown, L
Lacroix, R
(418) 338-8591

Collège de la rég. de l'Amiante; Centre spéc. en technologie minérale

**Ensemencement des haldes minières à l'aide des boues d'épuration.**

Effectuer la caractérisation chimique des résidus miniers et des boues d'épuration et procéder à des essais de croissance en serre, ce, pour identifier les facteurs de croissance de germination des plantes, les engrais chimiques appropriés et les doses de boues et d'engrais permettant une croissance optimale. Sélectionner les graminés et légumineuses spécialement tolérantes. Procéder à des essais de croissance sur le terrain en surface plane pour vérifier et réajuster les traitements et les espèces végétales déterminées en serre; procéder également à des essais de croissance en pente pour comparer la résistance à l'érosion de certains matériaux et techniques de stabilisation. Rapport disponible.

Financing/*Financement:* Société québécoise d'assainissement des eaux **END/*FIN*:** *1987 03*

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## 0502-8

Campbell, H
(416) 336-4717

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**A guide for the evaluation of long-term leachability of solidified wastes**

Guidance for selection of leaching test method based on expected leaching scenario. Protection of groundwater quality.

Financing/*Financement:* Ontario Ministry of Environment

$140 000

**START/*DÉBUT*:** *1987 11* **END/*FIN*:** *ongoing*

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## 0502-9

Campbell, H
(416) 336-4717

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Liquid fuel production from sewage sludge**

To demonstrate the viability of the thermal conversion of sewage sludge to liquid and solid fuels. Several papers are available from the project investigator.

Financing/*Financement:* Panel on Energy Research and Development

$3 200 000

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *1990 03*

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## 0502-10

Campbell, H
(416) 336-4717

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Conversion of residues to liquid and solid fuels**

To generate process design information from a lab-scale continuous reactor. Papers available from H. Campbell.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

$765 000

**START/*DÉBUT*:** *1983* **END/*FIN*:** *ongoing*

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## 0502-11

Christensen, R
(819) 953-1113

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Waste paper recycling in the pulp and paper industry**

none available

Financing/*Financement:* Environment Canada, Conservation & Protection

Forestry Canada

$80 000

**START/*DÉBUT*:** *1989 08* **END/*FIN*:** *1989 11*

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## 0502-12

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of chloride in NaOH solutions**

In support of the Prince George burn experiment, a method for determining chloride in the presence of 0.1N NaOH was developed using ion chromatography, by direct injection and conductivity detection. The method MDC is 0.1 mg/L.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

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## 0502-13

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Ash content and analysis of bark/wood chips**

A number of samples of bark and wood were analysed for ash content, metals, total sulphur and chloride.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

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## 0502-14

Clulow, V
(705) 675-1151

Laurentian University; Biology

**Radionuclides in mammals associated with uranium tailings**

To study occurrence and movements of Ra-226 in vegetation and aquatic mammals in the region of Elliot Lake, Ontario; calculation of concentration factors - transfer coefficients. Report available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

Laurentian University Research Fund

$19 450

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1987 07*

## 0502-15

Coakley, J
(416) 336-4881

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sources and transport of contaminated fine sediments, Great Lakes and St. Lawrence system**

To develop and field test means of identifying sources, transport rates and patterns of contaminated fine sediments and apply to specific cases in the Lower Great Lakes and St. Lawrence River system.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0502-16

Coburn, J
(416) 639-6320

Zenon Environmental Inc.

**Technical and Economic Assessment of Reverse Osmosis for Treatment of Landfill Leachate**

1. To evaluate the technical and economic benefits of reverse osmosis for treatment of landfill leachates. 2. To carry out bench scale studies on landfill samples and to use the results to develop a process design for an optimized membrane-based treatment system.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$49 600

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0502-17

Constable, T
(416) 336-4716

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**NITEP: solid waste management**

To provide technical support to the NITEP program, reports available from the Industrial Programs Branch, contact D. Hay.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ontario Ministry of Environment

$420 000

**START/*DÉBUT*:** *1985* **END/FIN:** *ongoing*

## 0502-18

Côté, L
Rivard, D
(418) 653-9368

Paquet, Dutil et associés; Division agro-alimentaire et environnement

**Recyclage des matières organiques des déchets domestiques et centre de compostage**

Etudier les différentes méthodes de compostage pour l'établissement d'un centre voué uniquement au compostage de matière organique triée à la source au niveau de la poubelle domestique.

Financing/*Financement:* Récupération Bois-Francs

Canada, ministère de l'Environnnment

$15 000

**START/*DÉBUT*:** *1986 11* **END/FIN:** *1987 11*

## 0502-19

Cournoyer, M
(514) 584-2207

Urgel Delisle et Associés

**Valorisation agricole des boues traitées à la chaux. Etude préliminaire.**

Vu l'absence de boues d'épuration chaulées au Québec, l'objectif vise à connaître la nature du produit résultant et sa valeur pour l'agriculture, tel qu'il serait produit en appliquant la méthodologie la plus probable dans les procédés de conditionnement et de stabilisation des boues d'épuration municipales. De plus d'autres données seront recueillies pour présager des problèmes et des solutions de la manipulation des boues chaulées à la ferme.

Financing/*Financement:* Québec, ministère de l'Environnement

$32 900

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1988 08*

## 0502-20

Cross, S
(604) 655-3255

Aquametrix Research Ltd.

**Waste material dispersion characteristics and deposition rates under B.C. salmon farming operations**

To provide information on deposition rates and composition of waste material (fecal/food waste) from a moderate sized salmon farm, to examine the dispersion of this material around the study farm, and to estimate the percentage of food material lost as a result of feeding practices at the participating farm.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$6 100

**START/*DÉBUT*:** *1987 11*

## 0502-21

Davies, J
(403) 632-6761

Alberta Environmental Centre

**Cultivation of exotic mushrooms on cellulosic wastes**

Production of high value exotic mushrooms on agricultural and forest industry cellulosic wastes such as straw, sawdust, etc.

Financing/*Financement:* Alberta Environmental Centre

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1991 03*

## 0502-22

Davies, J
(403) 632-6761
Alberta Environmental Centre

**Biodegradation of PCBs**

Assessment of use of white-rot-fungi to remove PCBs in contaminated soils, transformers etc.

Financing/*Financement:* Alberta Special Waste Management Corporation
Alberta Environmental Centre
$132 000

**START/*DÉBUT***: *1989 08* **END/FIN**: *1990 08*

## 0502-23

Davis, C
(416) 630-6331
Concord Scientific Corp.

**Recommended regulatory options for wood fired systems**

To produce a database to serve as a basis for development of guidelines and regulations for wood fired systems exceeding 1 million Btu/hour.

Financing/*Financement:* Environment Canada, Conservation & Protection
$24 960

**START/*DÉBUT***: *1989 08* **END/FIN**: *1990 03*

## 0502-24

Dibbs, H
(819) 953-1187
Environment Canada; Conservation and Protection; Technology Development Branch

**Performance monitoring of the Swan Hills Hazardous Waste Incinerator using surrogate compounds**

To investigate the use of sulphur hexafluoride and a chlorinated fluorocarbon to provide a continuous, reliable and economical means of determining the destruction efficiency of the Swan Hills incinerator. Final report available, March 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection
Alberta Environment
Alberta Special Waste Management Corporation
British Columbia Ministry of Environment and Parks
$125 000

**START/*DÉBUT***: *1988 03* **END/FIN**: *1988 09*

## 0502-25

Dibbs, H
(819) 953-1187
Environment Canada; Conservation and Protection; Technology Development Branch

**The evaluation of mobile and stationary facilities for the destruction of PCBs**

Up-to-date evaluation of the current status of PCB destruction facilities for their application in Canada. Published as an Environment Canada report, EPS 3/HA/5, May 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection
$10 000

**START/*DÉBUT***: *1987 07* **END/FIN**: *1988 03*

## 0502-26

Dixon, J
(416) 747-4000
Canadian Standards Association

**Development of a laboratory qualification standard (code) for laboratories analyzing industrial wastes**

To develop a qualification standard for laboratories analyzing industrial wastes required by Ontario Regulation 309. The standard is to be developed by a consensus approach and must be capable of being used with any subsequent certification programs that the Ministry may wish to proceed with at a future date. Output: CSA Standard Z201.

Financing/*Financement:* Ontario Ministry of Environment
$41 500

**START/*DÉBUT***: *1986 08*

## 0502-27

Draper, W
(819) 953-1120
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Western Canadian low-sulphur coal: its expanded use in Ontario**

To assess the costs and benefits of expanding the use of low-sulphur western Canadian coal by Ontario Hydro as a means of controlling acid gas emissions. Final summary report and technical report available.

Financing/*Financement:* Environment Canada, Conservation and Protection
British Columbia Ministry of Environment and Parks
Alberta Environment
$210 000

**START/*DÉBUT***: *1985 01* **END/FIN**: *1986 08*

## 0502-28

Eggens, J
(519) 824-4120
Department of Horticultural Science; University of Guelph

**Sewage Sludge Compost as Turf Fertilizer**

To evaluate the usefulness of sewage sludge compost as a replacement to milorganite as a fertilizer for golf course fairways as well as for other applications (home lawns, athletic fields, sod farms, etc.)

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$70 300

**START/*DÉBUT***: *1985 08* **END/FIN**: *1990 03*

## 0502-29

Farvolden, R
Gillham, R
(519) 885-1211
Institute for Groundwater Research; Department of Earth Sciences; University of Waterloo

**Laboratory & Numerical Model Studies, Criteria for Optimal Recovery of Sanitary Landfill Leachates**

1. Evaluation of tile drain systems as a method for leachate capture and development of criteria for their design. 2. Development of criteria for overall design of landfills to enhance leachate capture.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$107 100

**START/*DÉBUT*:** *1984 06* **END/*FIN*:** *1985 06*

## 0502-30

Fein, J
Fu, P
(416) 922-5100
Diversified Research Laboratories Limited

**Technology Review of Biological Treatment of Trace Level Toxicants in Landfill Leachates**

To evaluate the current status of biological treatment technologies applied to toxic industrial leachates using a literature review and interviews.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$31 800

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1988 07*

## 0502-31

Green, D
(519) 886-0520
Ecologistics Limited

**The Development of a Procedure to Evaluate the Erosion of Landfill Covers**

1. To evaluate the effect of climatic and environmental factors on the stability of landfill covers with respect to erosion. 2. To evalute the performance of lysimeters installed in a landfill for use as tools in the study of landfill cover infiltration. 3. Research and evaluate current landfill cover design.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$75 000

**START/*DÉBUT*:** *1987 07* **END/*FIN*:** *1989 03*

## 0502-32

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Inhibition de la production microbienne d'acide sulfurique dans les environnements miniers.**

Empêcher la génération biologique d'acides minéraux forts à partir de l'oxydation des sulfures métalliques (pyrite, pyrrhotine) dans les stériles et rejets miniers. Etude de l'adhérence bactérienne aux surfaces minérales.

Financing/*Financement:* Fonds personnel

## 0502-33

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Décomposition de l'arsénopyrite aurifère par thiobacillus ferrooxydans.**

Récupération de métaux précieux à partir de minerais réfractaires (arsénopyrite) et confinement des espèces toxiques (arsenic et scorodite) pour en disposer d'une manière sécuritaire.

Financing/*Financement:* Fonds personnel

## 0502-34

Guertin, S
(514) 774-0660
Mapaq; Service recherche en phytotechnie de Saint-Hyacinthe

**Pronfondeur d'enfouissement de fumier et d'un engrais vert sur la production du blé à panification.**

Déterminer l'effet de l'enfouissement de fumier à différentes profondeurs dans le sol sur les comportements physiques et chimiques du sol et sur la production et la qualité du blé à panification.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0502-35

Guertin, S
(514) 774-0660
Mapaq; Service recherche en phytotechnie de Saint-Hyacinthe

**Effet de l'enfouissement de fumier en profondeur sur la production et la qualité du blé Frédrick.**

Evaluer la production et la qualité du blé Frédrick sur le sable St-Judes amendé en profondeur avec du fumier et amendé en surface avec une formule minérale N.P.K.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0502-36

Harrison, J
(306) 780-6465
Environment Canada; Conservation and Protection; Environmental Protection

**Land application of sewage sludge**

To study the application of domestic sewage sludge to agricultural land as a fertilizer supplement and disposal technique.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0502-37

Hay, D
(819) 953-1109

Environment Canada; Conservation & Protection; Industrial Programs Branch

**National Incinerator Testing and Evaluation Program (NITEP)**

Evaluation of energy from waste combustion and emission control technologies from an energy and environmental perspective. Development of guidelines.

Financing/*Financement:* Environment Canada, Conservation and Protection

Energy, Mines and Resources Canada

Department of Supply and Services Canada

Communitié urbaine de Québec

United States Environmental Protection Agency

$9 500 000

**START/*DÉBUT***: *1983 11* ***END/FIN***: *1990 11*

## 0502-38

Hébert, J
(819) 821-7753

Université de Sherbrooke; Département de génie civil

**Traitement combiné des eaux de lixiviation de lieu d'enfouissement sanitaire mélangées à des eaux usées domestiques par un système de boues activées**

Etudier l'effet d'un déversement contrôlé de lixiviat dans une station d'épuration par boues activées sur la qualité de l'effluent et des boues. Trouver le taux de déversement optimal. Thèse.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

$13 600

## 0502-39

Hickman, D
(416) 756-4919

MacLaren Engineering

**Wood waste inventory of secondary industries in Ontario**

To develop an inventory of wood residues in Southern Ontario and to identify opportunities to utilize wood waste.

Financing/*Financement:* Ontario Ministry of Environment

$51 000

**START/*DÉBUT***: *1988 08*

## 0502-40

Hilditch, T
(416) 477-8400

Gartner Lee Associates Ltd.

**Establishing vegetation on erosion-prone landfill slopes in Ontario**

To research, test and compile in an understandable and usable form, the information and techniques necessary to remediate surface erosion problems through proper vegetation management at landfills across Ontario.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$194 800

**START/*DÉBUT***: *1987 02* ***END/FIN***: *1990 01*

## 0502-41

Hyne, J
(403) 220-5372

University of Calgary; Alberta Sulphur Research Ltd.

**Contaminated sulphur recovery and site rehabilitation**

A study of the recovery of contaminanted sulphur from inventory block base pads & rehabilitation of the site.

Financing/*Financement:* Alberta Sulphur Research Ltd.

$245 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1987 04*

## 0502-42

Jacobs, H
(416) 979-5038

Applied Geography Department; Ryerson Polytechnical Institute

**Inventory of site selection procedures for waste facilitation**

Review of literature regarding waste facility site selection.

Financing/*Financement:* Social Sciences and Humanities Research Council

$1 520

**START/*DÉBUT***: *1984 10*

## 0502-43

Joshi, R
(403) 220-7177

Department of Civil Engineering; University of Calgary

**1. Coal ash storage & utilization. 2. In-situ stabilization of waste during sites & permeability.**

1. To ensure safe storage of coal ash from power plants and to economically utilize ash as a construction material. 2. To allow construction on old waste sites without settlement and to minimize gas emission and leachates from such sites.

Financing/*Financement:* Natural Sciences & Engineering Research Council

TransAlta Utilities

## 0502-44

Kirk, D
(416) 978-7406

University of Toronto

**Determining the integrity of solidified wastes by large scale leach columns under environmental and controlled conditions**

To evaluate the leachability and determine the impact of municipal refuse interaction of solid industrial waste (steel flue gas dust) with various solid waste/municipal waste

combinations. The primary goal of the study is to quantify the rate of release and mobility of metal and organic species from the large column experimental test cells. The secondary goal is to predict the long term natural leaching of solid wastes.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$146 500

**START/*DÉBUT***: *1987 09* **END/*FIN***: *1990 08*

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## 0502-45

Kramer, J
(416) 525-9140

Department of Geology; McMaster University

**Nature of Substrates in Industrial Wastes Relative to Elemental Leachability**

The overall objective of the study is to use the characterization of the solid phases of industrial wastes to determine their metal leachability and hence to be able to specify the environmental conditions required for stabilization and disposal.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$97 400

**START/*DÉBUT***: *1986 10* **END/*FIN***: *1988 11*

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## 0502-46

Laughlin, B
Forrestal, B
(416) 822-4111

Ontario Research Foundation; Environmental & Chemical Engineering Division

**Enhanced sanitary landfill: a demonstration trial**

The overall objective is to demonstrate the efficacy of an enhanced landfill concept to permit rapid stabilization and increased capacity for municipal solid waste landfill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$195 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

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## 0502-47

Leduy, A
(418) 656-2634

Université Laval; Département de génie chimique

**Production de méthane par la digestion anaérobie des tiges de sorgho.**

Production de biogaz par la digestion anaérobie des tiges de sorgho à grain (Sorghum bicolor) provenant de la République du Mali (Afrique). Ce projet est réalisé sous contexte africain en vue d'une application réelle en Afrique dans le recyclage des déchets agricoles (actuellement en abondance) en énergie (actuellement en pénurie).

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$30 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1987 12*

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## 0502-48

Lesage, S
(416) 336-4597

Rivers Research Branch; National Water Research Institute; Environment Canada

**Toxic chemicals in groundwater**

Study the occurence and fate of toxic organic chemicals in groundwater. Performance Indicators: analysis and occurence of semi-volatile organic compounds in groundwater, submit MS to journal by Dec. 1989; groundwater quality beneath Sarnia, submit MS to journal by Sept. 1989; and develop capability to conduct anoxic biotransformation experiments at CCIW by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment Research Advisory Committee

$72 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

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## 0502-49

Liem, A
Conrad, D
(403) 632-6761

Alberta Environmental Centre

**Development and assessment of regulatory test methods for solid wastes**

Evaluation of existing and new methods for characterizing the properties of solid wastes for the purposes of classification, suitability for disposal and transport and effectiveness of treatment processes. Examples include leaching characteristics, weathering resistance and flammability. Technology transfer and information dissemination.

Financing/*Financement:* Alberta Environmental Centre

$180 000

**START/*DÉBUT***: *1983 04*

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## 0502-50

Liem, A
Conrad, D
(403) 632-6761

Alberta Environmental Centre

**Permeability of solidified/stabilized waste**

Development of a standard method, assessment of properties and factors affecting permeability and use of laboratory results for field evaluation.

Financing/*Financement:* United States Environmental Protection Agency

Alberta Environmental Centre

$130 000

**START/*DÉBUT***: *1989 03* **END/*FIN***: *1990 09*

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## 0502-51

Liem, A
Conrad, D
(403) 632-6761

Alberta Environmental Centre

**Stabilization of organics with clay/flyash**

Feasibility assessment of using clay and flyash as treatment additives prior to landfilling to contain organic contaminants.

Financing/*Financement:* Alberta Environmental Centre

New Jersey Institute of Technology

$180 000

**START/*DÉBUT*:** *1988 07* **END/FIN:** *1990 07*

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## 0502-52

Loranger, S
(514) 251-0125

Groupe recherche en biostatistique de l'Environnement; G.R.E.B.E. Inc.

**Analyse statistique des données de caractérisation des lieux d'élimination des déchets.**

Analyser sur une base statistique les données hydrogéologiques, physico-chimiques, et biologiques des lieux canadiens d'élimination de déchets où l'on retrouve des substances toxiques afin de: porter un jugement sur la représentativité de ces dernières et l'usage qu'il peut en être fait; identifier des paramètres pouvant servir d'indicateurs du comportement d'un ensemble de substances ou de l'état de dégradation d'un site pour en faciliter le suivi. Un système de gestion des données de ces sites sera développé.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec, ministère de l'Environnement

$43 560

**START/*DÉBUT*:** *1988 10* **END/FIN:** *1989 12*

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## 0502-53

MacEachern, R
(902) 421-6552

Metropolitan Authority of Halifax

**Landfill leachate treatment system**

To develop and demonstrate an effective on-site anaerobic leachate treatment system.

Financing/*Financement:* Panel on Energy Research and Development

Metropolitan Authority of Halifax

$2 600 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1988 03*

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## 0502-54

McBride, R
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Treatment of Landfill Leachate by Spray Irrigation**

To evaluate leachate spray irrigation as an economic, environmentally-sound, and long-term solution to one particular sanitary landfill seepage problem (Muskoka Lakes) with a view to providing in the long-term recommendations and implementation procedures for this type of waste-disposal across the province.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$82 500

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1988 06*

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## 0502-55

McBride, R
(519) 824-4120

University of Guelph; Department of Land Resource Science

**Slow rate infiltration land treatment and recirculation of landfill leachate in Ontario**

To evaluate slow rate infiltration land treatment of leachate in forest and agricultural areas. To evaluate recirculation of leachate as partial treatment.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$447 400

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

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## 0502-56

McIver, B
(514) 632-9910

Nova Pb Inc.

**Processing Noranda smelter dust through a rotary kiln to produce acceptable products**

To demonstrate the technical and economic viability of processing Noranda smelter dusts through Nova Pb Inc.'s rotary kiln to produce acceptable products (lead-silver bullion, copper matte, arsenic speiss, zinc-cadmium fume). Final report in printing; available May 1989.

Financing/*Financement:* Panel on Energy Research and Development

Nova Pb Inc.

$410 427

**START/*DÉBUT*:** *1986 12* **END/FIN:** *1988 03*

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## 0502-57

Melcer, H
(416) 336-4546

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Modification of existing aerobic sludge digestors to incorporate ATAD technology**

To evaluate the performance of a new West German technology for stabilizing municipal wastewater treatment plant sludge.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$215 000

**START/*DÉBUT*:** *1989 01* **END/FIN:** *1991 01*

## 0502-58

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants - water/air**

Assessment of the feasibility of habitat creation at confined disposal facilities as remediation of contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0502-59

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment toxicity and treatment methods in Hamilton Harbour**

To evaluate sediment toxicity and methods of reducing sediment toxicity.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Ontario Ministry of Environment

$500 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1990 10*

## 0502-60

Nadeau, R
Marois, P
(418) 338-8591

Collège de la rég. de l'Amiante; Centre spéc. en technologie minérale

**Mise au point d'un véhicule aratoire pour incorporer les boues d'épuration lors de l'ensemencement des haldes de résidus d'amiante.**

Mettre au point un équipement pouvant effectuer sur les pentes les différentes étapes d'ameublissement et d'ensemencement des haldes des résidus d'amiante, tout en incorporant les boues d'épuration lesquelles sont une source importante et économique de matière organique et d'engrais; vérifier par des essais en pente le fonctionnement de l'appareil et son efficacité à reproduire les opérations d'ensemencement.

Financing/*Financement:* Société québécoise d'assainissement des eaux

Canada, ministère de l'Environnement

$180 000

**START/*DÉBUT***: *1989* ***END/FIN***: *1991 04*

## 0502-61

Narasiah, S
(819) 821-7109

Université de Sherbrooke; Département de génie civil

**Restauration du parc à résidus de la East Sullivan par l'utilisation de résidus organiques**

Offrir une contribution valable à la résolution d'un problème de gestion des boues de la ville de Val d'Or, de gestion de résidus forestiers et de réaménagement de résidus miniers de la région.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$33 100

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 02*

## 0502-62

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of ocean dumping information for active dumpsites on the BC coast from 1979 to 1986**

Updating ocean dumping information (research, monitoring) on the BC coast.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$5 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0502-63

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Sediment toxicity tests on effects of ocean dumped material on eggs of an important fish species**

1) To assess the toxicity of three different ocean dumped materials on fertilized eggs. 2) To evaluate the effectiveness of 'capping' in reducing toxicity.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$16 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0502-64

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**An assessment of cadmium in marine sediments. A study of high CD levels in Ucluelet Inlet, B.C.**

To distinguish between natural and anthropogenic sources of cadmium in Ucluelet Inlet sediments.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$18 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0502-65

Nut, S
(416) 858-2370

Canviro Consultants Ltd.

**Management Strategy for Total Phosphorus in Municipal Sewage Treatment Plant Effluent**

1. Determine factors affecting Total Phosphorus removal 2. Assist Sewage Treatment Plants to improve Total Phosphorus removal 3. Determine best long-term abatement strategy for reducting Total Phosphorus loadings

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$210 000

## 0502-66

Orchard, I
(416) 973-1089

Environment Canada; Conservation & Protection; Ontario Region

**Study of open water dredging disposal**

Use underwater camera to assess the effectiveness of capping dredged material disposed in open water.

Financing/*Financement:* Environment Canada, Conservation & Protection

$8 000

**START/*DÉBUT***: *1982 05* ***END/FIN***: *1986 09*

## 0502-67

Osborne, J
(709) 772-4047

Environment Canada; Conservation & Protection

**Acute and chronic toxicity of discharged oily cutting from exploratory oil well drilling**

Determine potential impact of discharges. Published in Proceedings of Conference on Offshore Waste 88, publisher Elsevier.

Financing/*Financement:* Northern Oil & Gas Action Program

$30 000

**START/*DÉBUT***: *1985* ***END/FIN***: *1986 00*

## 0502-68

Osborne, J
(709) 772-4047

Environment Canada; Conservation & Protection

**Development of a test protocol for assessing biodegradabilities of drilling fluid base oils**

The objective is to be able to assess the rate of biodegradation of oil discharged during well drilling, by assessing it at the approval stage. Therefore allowing use of most biodegradable oil. Report available in 1990.

Financing/*Financement:* Panel on Energy Research & Development

$150 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1990 03*

## 0502-69

Packman, G
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea ocean dumpsite selection**

1) To select a preferred ocean dumpsite for scrap metal. 2) To carry out the pre-dump portion of a program to monitor the effects of scrap metal disposal.

Financing/*Financement:* Northern Oil and Gas Action Program

Ocean Dumping Control Act Research Fund

$152 500

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1987 03*

## 0502-70

Power, B
(709) 772-5491

Environment Canada; Conservation & Protection

**Study of a fish offal dumping site in Fogo Harbour, Newfoundland**

To determine the physical and chemical problems caused by a gurry ground that has been in continuous use over a number of years. This information would then assist in the protection of fisheries and recreational activities from pollution through the permitting of dump sites under the Ocean Dumping Control Act.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$7 500

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1986 01*

## 0502-71

Pryce, D
(403) 237-1312

BP Canada Inc.

**KC1-polymer drilling mud disposal project (reclamation and waste disposal)**

Research and operational trials to establish: 1. optimum salt-loading rates for mud disposal on clay-till soils (land spreading) and 2. alternate strategies for salt-based mud disposal.

Financing/*Financement:* British Petroleum Canada Inc.

$400 000

**START/*DÉBUT***: *1984* ***END/FIN***: *1990 00*

## 0502-72

Pullen, M
(416) 449-2500

Marshall Macklin Monaghan Limited

**Geoflow meter, application to measuring gas flow in soil**

To determine the applicability of the Geoflow Meter and Probe to measure directly the flux of soil gases away from landfill sites. If successful, this would give a method of esti-

mating gas volume migration away from a site. At present only concentration of combustible gas can be measured.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$56 600

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0502-73

Quévillon, M
(819) 764-3287

MAPAQ de Rouyn-Noranda

**Parquet d'engraissement semi-latté et écoulement continu de fumier de bouvillon avec ventilation naturelle contrôlée.**

Connaître l'efficacité de cette forme de gestion des déchets solides: écoulement continu de fumier de bouvillon sous nos conditions; vérifier les conditions de logement et leur influence sur les performances des bouvillons.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$20 355

**START/*DÉBUT*:** *1988 12* **END/*FIN*:** *1991 12*

## 0502-74

Quigley, R
(519) 679-3315

Geotechnical Research Centre; University of Western Ontario

**Clay/Leachate Compatibility Study Hydraulic Conductivity, Ottawa-Carleton 'Leda' Clay Barrier Soils**

To assess the compatibility of four Leda Clay samples (from the Ottawa-Carleton region) with typical domestic waste leachate. The work would be used as input for environmental hearings associated with selection of future landfill sites on leda clay. The work was requested by MacLaren Engineers at the request of the Ontario Ministry of the Environment.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$25 000

**START/*DÉBUT*:** *1987 03* **END/*FIN*:** *1989 07*

## 0502-75

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Impact of potash tails piles on groundwater**

To determine the movement of brine into aquifers under potash tails piles. Final reports available.

Financing/*Financement:* Potash Corporation of Saskatchewan

Canada Centre for Mineral & Energy Technology (EMR)

$258 000

**START/*DÉBUT*:** *1982 04* **END/*FIN*:** *1986 12*

## 0502-76

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Decommissioning of potash tails piles**

To develop a method for decommissioning a potash tails pile in an environmentally and cost effective manner. Interim reports available.

Financing/*Financement:* Potash Corporation of Saskatchewan

Canada Centre for Mineral & Energy Technology (EMR)

$310 000

**START/*DÉBUT*:** *1982 04*

## 0502-77

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Hydrology of potash tails piles**

1. To determine the storm water run-off from a potash tails pile. 2. To determine the pathways of brine movement in a potash tails pile. Final report available.

Financing/*Financement:* Potash Corporation of Saskatchewan

Canada Centre for Mineral & Energy Technology (EMR)

$186 000

**START/*DÉBUT*:** *1984 04* **END/*FIN*:** *1985 12*

## 0502-78

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Stability of potash tails**

To determine the ultimate stability and failure modes of potash tails piles. Final report available.

Financing/*Financement:* Potash Corporation of Saskatchewan

$70 000

**START/*DÉBUT*:** *1982 04* **END/*FIN*:** *1985 12*

## 0502-79

Reveret, J-P
(514) 282-8260

Université du Québec à Montréal; Maitrise en science de l'environnement

**Gestion intégrée des déchets urbains solides à Montréal.**

Elaborer des scénarios de gestion rationnelle et intégrée de la filière des déchets urbains solides dans l'île de Montréal afin de leur permettre de déterminer des politiques, dans ce domaine, en toute connaissance de cause. A l'intérieur de ce projet mon apport consiste à établir une monographie détaillée de la situation à Montréal et dans la région métropolitaine en ce qui concerne les déchets urbains solides.

Colliger des statistiques, des analyses de la composition, etc.

Financing/*Financement:* Québec, ministère de l'Environnement

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## 0502-80

Ridley, K
(306) 975-5747

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Landfills**

To study contaminant transport in general utilizing a landfill site as a point source. The study will include leacate/clay mineral interaction, diffusion, large scale infiltration field test, fracture flow, modelling, and installation of a leachate collection well, suction lysimeter soil matrix potential instrumentation, standpipe piezometers and neutron probe access tubes. To make recommendations for further research for an ongoing study program, anticipated that this program will be active for many years.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/*FIN***: *1989*

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## 0502-81

Ross, G
(819) 997-1222

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of solid and liquid waste management practices for flue gas desulphurization**

Recommended waste/wastewater management practices for flue gas desulphurization incorporated in environmental codes of practice for steam electric power generation.

Financing/*Financement:* Panel on Energy Research and Development

$1 051 000

**START/*DÉBUT***: *1981 04* **END/*FIN***: *1989 03*

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## 0502-82

Ross, G
(819) 997-1222

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assess environmental implications and control technologies for fluidized bed combustion facilities**

Publish recommended practices for fluidized bed combustion waste/ wastewater handling and disposal.

Financing/*Financement:* Panel on Energy Research and Development

$1 404 000

**START/*DÉBUT***: *1981 04* **END/*FIN***: *1993 03*

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## 0502-83

Roy, C
(418) 656-7406

Université Laval; Département de génie chimique

**Recyclage des vieux pneumatiques en huiles et en noir de carbone par pyrolyse sous vide.**

Développement d'un procédé depuis l'échelle du laboratoire jusqu'à l'échelle pilote (200 kg/h) pour la pyrolyse sous vide de pneus usagés. Les produits obtenus sont des huiles pyrolytiques, du noir de carbone, de l'acier, des fibres et du gaz. Les essais sont effectués dans un réacteur alimenté en continu et sous vide avec des gros morceaux de pneus déchiquetés. Le projet initial a débuté en 1984 et devant se poursuivre durant quatre ans; cependant, la faillite de Petro-Sun a considérablement freiné le projet. L'usine pilote a été rachetée par la compagnie Ultramar et se trouve présentement démontée sur le site de la raffinerie à St-Romuald. Un des principaux obstacles à la relancé de ce projet est l'absence d'une législation claire en ce qui regarde la gestion des vieux pneumatiques.

Financing/*Financement:* Canada, ministère de l'Energie, des Mines et des Ressources

Petro Sun International Inc.

$1 250 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1990 08*

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## 0502-84

Roy, C
(418) 656-7406

Université Laval; Département de génie chimique

**Recyclage des résidus pétroliers par pyrolyse sous vide.**

Développer et expérimenter une Unité de Développement de Procédé dont le but est de transformer (par décomposition thermique sous vide) les résidus pétroliers provenant des usines de raffinage du pétrole en huiles recyclables directement dans le procédé de raffinage. Les résidus solides et secs résultant du traitement peuvent être par la suite enfouis sans danger pour l'environnement.

Financing/*Financement:* Ultramar Canada Inc.

Canada, ministère de l'Energie, des Mines et des Ressources

$580 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1991 05*

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## 0502-85

Roy, M
(418) 457-3771

MAPAQ de Saint-Hilarion

**Récupération et revalorisation du fumier de poules pondeuses.**

Récupérer ce fumier pour l'alimentation des bovins de boucherie ou comme fertilisant en le faisant sécher à un pourcentage d'humidité inférieur à 12%. L'unité de séchage est disposée dans une enceinte isolée et étanche.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$24 000

**START/*DÉBUT***: *1987 10* **END/*FIN***: *1989 10*

## 0502-86

Rush, R
(416) 445-0434
Canviro Consultants Ltd.

**Development of Guidelines to Control the Disposal of Wastes as Backfill Material in Ontario**

1. Review of guidelines related to backfill of wastes. 2. To prepare an inventory of major industrial sources of inert fill material and to describe leachate characteristics. 3. Development of a process for the classification of inert fill material. 4. Development of a preliminary set of criteria for backfill applications.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$26 900

**START/*DÉBUT***: *1985 09*

## 0502-87

Sala, J
(514) 848-8000
Société d'électrolyse et de chimie Alcan Ltée

**Programme de réduction et recyclage des poussières de coke sous-calcinées**

Eliminer la disposition des poussières de coke sous-calcinées au dépotoir. Objectifs: Identifier et évaluer des alternatives permettant de réduire la quantité de poussières générées lors de la calcination du coke; Agglomérer les poussières sous-calcinées et évaluer l'impact de les recycler dans les fours de calcination.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$600 000

**START/*DÉBUT***: *1985* **END/*FIN***: *1989*

## 0502-88

Sala, J
(514) 848-8000
Société d'électrolyse et de chimie Alcan Ltée

**Réutilisation des vieilles brasques**

Essais visant la réutilisation de la fraction carbone des brasques à titre de combustible d'appoint ou de substitut chimique.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$700 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1987 12*

## 0502-89

Sala, J
(514) 848-8000
Société d'électrolyse et de chimie Alcan Ltée

**Utilisation de boue d'épurateur.**

Recycler les solides des épurateurs humides de Beauharnois et de Shawinigan au lieu de l'entreposage à un site certifié.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$115 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1988*

## 0502-90

Sala, J
(514) 848-8000
Société d'électrolyse et de chimie Alcan Ltée

**Etude hydrogéologique.**

Le but de cette étude était d'évaluer la qualité et le déplacement de l'eau souterraine aux sites de disposition d'Alcan à Jonquière.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$1 200 000

**START/*DÉBUT***: *1984* **END/*FIN***: *1988*

## 0502-91

Salin, E
(514) 392-5784
Department of Chemistry; McGill University

**Methods for the direct analysis of solids by inductively coupled plasma atomic emission spectrometry**

The development of instrumentation and methodologies which will allow the direct analysis of solid and difficult liquid samples.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$125 300

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1989 04*

## 0502-92

Scroggins, R
(819) 997-1223
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of oilfield wastes by land application: environmental effects and future land use**

To assess the potential environmental impact of oily waste application to land (ie: groundwater contamination, plant uptake of contaminants). To examine the causes and practical constraints which would inhibit the restoration of land treatment sites.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Environment, Groundwater Protection Branch

$400 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1990 03*

## 0502-93

Scroggins, R
(819) 997-1223
Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental implications of land application of diesel invert drill cutting residues**

To determine whether diesel invert drill cutting residues can be applied to soil (ie: land treatment) at a practical and environmentally acceptable application rate. To determine the most cost-effective toxicity amending substrate to add to the soil/ drilling residue mixture. Five year project is now complete, final report is in the last stage of review.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

$334 000

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1989 03*

## 0502-94

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Waste sludges produced by the Canadian natural gas processing industry**

To develop, validate and publish a cost-effective methodology for determining the characteristics and environmental significance of natural gas plant sludges. To examine all potential sludge treatment/ disposal options and associated cost implications. Final draft report is due March 1990.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Research Council

$540 000

**START/*DÉBUT***: *1984 05* **END/*FIN***: *1990 03*

## 0502-95

Sushan, B
(416) 221-9066

SCIEX (Division of MDS Health Group Ltd.)

**Tage 6000 Method for Measurement of Dioxin and Furan Emissions at Municipal Solid Waste Incinerators**

To assess cost effectiveness and practicality of a methodology to rapidly determine dioxins and furans at municipal solid waste incinerators.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$141 000

**START/*DÉBUT***: *1985 01* **END/*FIN***: *1987 12*

## 0502-96

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Effects monitoring - Strait of Canso common user dump site**

To monitor the impacts of dredged spoils disposal at the Canso dump site.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

Environment Canada, Conservation & Protection

$15 200

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1987 03*

## 0502-97

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Common dump site selection for the northeastern New Brunswick region**

To select common user dump sites for dredged spoils disposal in the northeastern New Brunswick region.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$10 000

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1987 03*

## 0502-98

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Canso common ocean dump site post-dumping assessment**

To study the impacts of dredged spoils dumping at the Canso ocean dump site.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

Environment Canada, Conservation & Protection

$30 000

**START/*DÉBUT***: *1987 06* **END/*FIN***: *1987 10*

## 0502-99

Thomas, G
Smith, D
(416) 822-4111

Ontario Research Foundation

**Mutagenicity testing of leachates from waste disposal sites**

To develop methods based on the Ames Salmonella Mutagenicity Assay to detect potentially harmful contamination of groundwater supplies by genotoxic substances leached from landfill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$300 000

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1990 08*

## 0502-100

Tollefson, E
Hall, E
(403) 220-5754
University of Calgary; Dept. of Chemical & Petroleum Engineering

**Process for desulfurization of coke produced in recovering synthetic crude oil from bitumen**

To develop a process for the removal of sulphur from coke produced by Syncrude Canada Ltd. and Suncor Inc. Removal of a major portion of the sulphur present in the coke would make it feasible to burn the coke as a relatively clean fuel. Reports are available through Alberta Oil Sands Technology and Research Authority in Edmonton.

Financing/*Financement:* Alberta Oil Sands Technology & Research Authority

Natural Sciences & Engineering Research Council

$96 000

**START/*DÉBUT***: *1975 04*

## 0502-101

Tsangaris, A
Carter, G
(613) 526-1400
Resorption Canada Ltd

**Municipal solid waste: feasibility of gasification with plasma ARC**

To demonstrate the operational and environmental benefits of plasma arc gasification of municipal solid waste and its potential acceptability in waste management.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$75 000

**START/*DÉBUT***: *1986 03* **END/*FIN***: *1989 10*

## 0502-102

Turcotte, J
(418) 656-7474
Université Laval; Département de chimie

**Impact des boues des eaux usées sur l'environnement.**

Etudes des effets de l'enfouissement et de l'incinération des boues provenant du traitement des eaux usées. Evalue la lixiviation des métaux lourds des boues dans le sol et les pertes dans l'air lors de l'incinération des boues.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$25 000

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1987 09*

## 0502-103

Turcotte, J
(418) 656-7474
Université Laval; Département de chimie

**Etude des boues des eaux usées: effet des pluies acides et de l'incinération sur leur contenu en métaux lourds.**

Evaluer l'impact des pluies acides et de l'incinération sur les boues issues du traitement des eaux usées. Objectifs: reproduire en laboratoire les conditions naturelles de la lixiviation des boues par les pluies acides; étudier les mécanismes des transformations chimiques que subissent les métaux et leurs oxydes lors de l'incinération des boues des eaux usées.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$20 000

## 0502-104

Van Coillie, R
(514) 283-9997
Centre Saint-Laurent; Environnement Canada

**Développement d'indicateurs biochimiques de la toxicité des contaminants au milieu marins**

Mise au point d'un bioessai sous-létal chronique pour la toxicité des sédiments marins à count terme.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

Department of Fisheries and Oceans Canada

Ocean Dumping Control Act Research Fund

Université du Québec

$210 000

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1990 01*

## 0502-105

Van Coillie, R
(514) 283-9997
Centre Saint-Laurent; Environnement Canada

**Signification biologique des métaux traces dans les sédiments**

Spéciation des métaux traces dans les sédiments et biodisponibilité de ces métaux pour des mollusques en eaux douce.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$65 000

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1988 03*

## 0502-106

Veilleux, J
(418) 643-7994
Ministère l'Energie et Ressources; Direction recherche et développement

**Utilisation de biomasse, de boues d'égout et de lisiers sur les sols forestiers.**

1-Amélioration des propriétés physico-chimiques des sols pour assurer la croissance normale d'arbres plantés. 2-Augmentation du bilan humique des sols et de la teneur

en éléments nutritifs. 3-Détermination des quantités optimales ou maximales qui peuvent être appliquées. 4-Vérification des effets résiduels et des toxicités possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$220 000

**START/*DÉBUT*:** *1985* **END/FIN:** *1990 04*

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## 0502-107

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Facteurs de succès pour la valorisation de la biomasse au Québec**

Financing/*Financement:* Centre québécois de valorisation de la biomasse

$25 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1987 06*

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## 0502-108

Veuilleux, J
(418) 651-8173

Ministère l'Energie et Ressources; Direction recherche et développement

**Recherche sur l'emploi de biomasse forestière et de lisiers en pépinières.**

Etudie les effets de l'utilisation en pépinière de biomasse forestière et de lisiers sur les propriétés physico-chimiques et biologiques des sols. Mesure les effets sur la productivité et la production de plants et semis en pépinière. Détermine les quantités optimales à appliquer. Vérifie-les effets résiduels et toxiques possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$115 000

**START/*DÉBUT*:** *1981* **END/FIN:** *1983*

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## 0502-109

Webber, M
(416) 336-4519

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Technology development: land application of municipal sludge**

To develop and demonstrate technology with a view to promoting land application of sludge.

Financing/*Financement:* Ontario Ministry of Environment, Municipal Industrial Strategy Abatement

$180 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *ongoing*

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## 0502-110

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Trace metal extractions from soils in relation to air emissions monitoring**

To determine extractable metals in various soils in the area of a large refuse incinerator using several methods to monitor accumulations in soil and relate soil levels to vegetation levels.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

Greater Vancouver Regional District

**START/*DÉBUT*:** *1987 04*

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## 0502-111

Wilson, R
(416) 671-2600

Beak Consultants

**Upgrading primary clarifier sludges for auto incineration - pulp and paper (PERD project 12305)**

To survey and assess various sludge dewatering processes and equipment, including economic assessment. Once the project is completed a final report will be available.

Financing/*Financement:* Panel on Energy Research and Development

Energy, Mines and Resources Canada

Environment Canada, Conservation and Protection

$288 000

**START/*DÉBUT*:** *1984 08* **END/FIN:** *1987 03*

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## 0502-112

Zukovs, G
(416) 858-2320

CANVIRO Consultants Ltd.

**Development of the backfill and construction application guidelines - phase II**

Identify Ontario sites where industrial waste has been or is being used as backfill, complete a comprehensive study of the impact, assess changes with time and assess draft guidelines developed in phase 1.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$195 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

# LIQUID WASTES MANAGEMENT

# *GESTION DES DÉCHETS LIQUIDES*

## 0503-1

Abouguendia, Z
(306) 933-8185
Saskatchewan Research Council

**Effects of drilling wastes on agricultural land**

To evaluate the effect of land application of drilling wastes from Sask. oilfields on soils and crops. Report will be available in April 1988.

Financing/*Financement:* Saskatchewan Energy and Mines
Energy Mines and Resources Canada
Saskatchewan Research Council
$188 000

**START/*DÉBUT***: *1985 02* ***END/FIN***: *1988 03*

## 0503-2

Alfieri, A
McConnen, M
(416) 235-6001
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of base/neutral and phenolic compounds in (MISA test groups 19, 20) municipal sewage sludge**

To develop method for the analysis of base/neutral and phenolic compounds in municipal sludge.

Financing/*Financement:* Ontario Ministry of Environment
$95 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0503-3

Armour, M
(403) 492-5566
University of Alberta; Department of Chemistry

**Recycling and disposal of chemical wastes**

To develop and test in the laboratory methods for the recycling, spillage and waste disposal for small quantities of surplus and waste chemicals, and to document the methods. The results are presented in two manuals: Hazardous Chemicals Information & Disposal Guide; and Potentially Carcinogenic Chemicals Information & Disposal Guide, both by M.A. Armour et al. They are available from Terochem Laboratories Ltd., Box 8188, Station F, Edmonton, Alberta T6H 4P1.

Financing/*Financement:* Alberta Community & Occupational Health
Alberta Environmental Research Trust
Alberta Heritage Foundation for Medical Research
$345 350

**START/*DÉBUT***: *1982 09*

## 0503-4

Austin, A
Lucey, W
(604) 721-8852
University of Victoria

**Productivity of periphyton communities, their biochemical and nutritional status in aquatic systems**

Enhancement and control of growth and productivity for use as feedstock in aquaculture system. Assessment of nutritive value of periphyton biomass, by feed trials, to determine efficacy for use in specialized diets. Publications expected spring of 1988.

Financing/*Financement:* British Columbia Ministry of Environment & Parks
National Science & Engineering Research Council
Science Council of British Columbia
$90 000

**START/*DÉBUT***: *1986 05*

## 0503-5

Bachu, S
(403) 438-7601
Alberta Research Council

**Numerical prediction of pressure buildup at the Swan Hills injection well of the Alberta Special Waste Management Corporation (ASWMC)**

To calibrate through history matching a finite element numerical model of the deep injection of liquid wastes at the Swan Hills facility of the ASWMC. To predict for various rates of injection the pressure buildup during the next 20 years.

Financing/*Financement:* Stanley Associates Engineering Ltd.
$22 000

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1989 03*

## 0503-6

Bachu, S
Hitchon, B
(403) 438-7601
Alberta Research Council

**Hydrogeology of the Swan Hills area: evaluation for deep waste injection**

Selection of aquifers for environmentally safe disposal of waste water from treatment processes at the Swan Hills facility of Alberta Special Waste Management Corporation.

Financing/*Financement:* Alberta Special Waste Management Corporation

$135 000
**START/*DÉBUT***: *1985 09* ***END/FIN***: *1986 07*

## 0503-7

Bachu, S
Hitchon, B
(403) 438-7601

Alberta Research Council

**Feasibility study to determine the impact of bitumen recovery at AOSTRA underground test facility**

To identify, collect and review all pertinent geological, fluid flow, contaminant transport and heat transfer information in order to assess the availibility of data for future impact studies.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 03*

## 0503-8

Bachu, S
Hitchon, B
(403) 438-7601

Alberta Research Council

**Evaluation of deep waste disposal, Cold Lake Area, Alberta and Saskatchewan**

To evaluate the regional and local effects of deep waste injection at sites in Cold Lake area, Alberta, in terms of pressure buildups, geochemical reactions between injected waters and formation waters and rocks, and in terms of fracturing thresholds, using predicted rates of injection to the year 2015.

Financing/*Financement:* Alberta Environment

Alberta Research Council

$600 000

**START/*DÉBUT***: *1985 01* ***END/FIN***: *1988 03*

## 0503-9

Barker, J
Cherry, J
(519) 885-1211

Institute for Groundwater Research; University of Waterloo

**Mobility and persistence of selected organic solute in anaerobic groundwaters and possible in situ remediation measures**

To define the fate and persistence of selected organic solutes in anaerobic groundwater. To evaluate remediation. To establish a field test site.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$378 900

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0503-10

Barrington, S
(514) 398-7776

Collège MacDonald; Département de génie rural

**Valorisation de lisiers de porcs pour en faire un fertilisant ayant moins d'odeurs mais avec une concentration plus élevée en N, P, K.**

Utilisation d'un déchet, les poussières de cimenteries, riches en K et Ca, pour enrichir les lisiers: en améliorant la sédimentation des solides et en augmentant leur valeur fertilisante.

Financing/*Financement:* Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Conseil des recherches en argo-alimentaire et pêcheries du Québec

$34 000

## 0503-11

Barrington, S
Chavez, E
(514) 398-7776

Collège MacDonald; Département de génie rural

**La réalimentation de lisiers de porcs traités par digestion thermophile.**

Faire l'essai d'un digesteur thermophile disponible sur le marché et évaluer la réalimentation des fumiers traités.

Financing/*Financement:* Québec, ministère de l'Agriculture des Pêcheries et de l'alimentation

Canada, ministère de l'Agriculture

$35 000

## 0503-12

Benedek, A
(416) 639-6320

Zenon Environmental for Durez Limited

**Recovery and reuse of phenol in plastic making processes**

To investigate methods of reducing phenol use, and recovery of waste phenol for re-use in plastic manufacture.

Financing/*Financement:* Ontario Ministry of Environment

$20 000

**START/*DÉBUT***: *1988 07*

## 0503-13

Bibeau, D
(514) 878-4801

Canadian International Paper Inc.

**Kamyr ring press for pulp and paper sludge dewatering**

To demonstrate an effective sludge dewatering system which will be applicable at pulp and paper plants across the country and which will reduce sludge incineration and disposal problems.

Financing/*Financement:* Panel on Energy Research and Development

Canadian International Paper

$1 081 000

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1988 07*

## 0503-14

Blanchette, J
(514) 773-2521

MAPAQ; Service de recherche en phytotechnie de Saint-Hyacinthe

**L'utilisation de la mousse de tourbe pour la gestion des odeurs et la conservation de la valeur fertilisante du lisier de porc.**

Atténuer le dégagement d'odeurs pendant l'entreposage et à l'épandage d'au moins 90%. Evaluer l'avantage économique de la conservation d'azote en fonction de l'épaisseur de tourbe ajoutée et de la quantité de la mousse de tourbe utilisée.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$94 620

**START/*DÉBUT***: *1987 12* **END/*FIN***: *1990 12*

## 0503-15

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Experimental rivers research**

To determine the factors controlling the kinetics of algal colonization and growth in riverine systems.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0503-16

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**River nutrient spiralling**

To determine the extent of downstream influence of point source nutrient loadings in rivers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0503-17

Bothwell, M
(306) 975-5768

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**River macrophyte ecology**

To determine what factors govern the distribution and abundance of macrophytes in Canadian prairie rivers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989* **END/*FIN***: *ongoing*

## 0503-18

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Method development to determine organic and inorganic compounds in environmental samples**

To develop analytical methods for semi-volatile organic compounds in ambient air and source emission samples and for multi-elemental analysis of dichotomous filter samples. Procedures will form part of in-house analytical methods manual.

Financing/*Financement:* Environment Canada, Conservation and Protection

National Incinerator Testing and Evaluation Program

$400 000

**START/*DÉBUT***: *1983* **END/*FIN***: *ongoing*

## 0503-19

Canning, R
(416) 639-6320

Zenon Environmental Inc.

**Field demonstration of membrane technology for treatment of landfill leachate**

To demonstrate leachate treatment by means of membrane-based processes. To design, and construct a portable pilot-scale membrane system and operate the system as treatment process at Muskoka Lakes Landfill Site. To assess technical and economic feasibility of this process and make recommendations for applications at other sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$130 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0503-20

Carey, J
(416) 336-4693

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant pathways in receiving waters**

To identify factors controlling bioaccumulation of atmospheric contaminants in lake organisms. Investigate contaminant transport in Fraser River estuary. Begin study on fate and effect of pulp mill related chlorinated organics in receiving waters. Evaluate adverse effects of pulp mill effluents on fish (DFO-Hodson). Investigate processes controlling fate of TCMTB in Fraser River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$650 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0503-21

Chapman, D
(416) 336-4621

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Secondary clarifier investigations**

To plan, coordinate and monitor international research activities relating to the design and operation of secondary clarifiers. Interim report: Field Test Protocol for Developing Secondary Clarifier Rating Curves.

Financing/*Financement:* United States Environmental Protection Agency

Environment Canada, Conservation & Protection

$109 700

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

## 0503-22

Cherry, J
(519) 888-4516

University of Waterloo; Centre for Groundwater Research

**Groundwater impact from large septic systems for sewage disposal in Ontario**

To better understand contaminant attenuation processes in large septic systems and develop a method to predict the extent of aquifer contamination from new large septic systems.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$195 000

**START/*DÉBUT***: *1989 05* **END/*FIN***: *1992 04*

## 0503-23

Chieng, S
(604) 228-4426

University of British Columbia

**Influence of primary anaerobic municipal sewage sludge on poorly drained soil hydraulic properties**

none available

Financing/*Financement:* Agriculture Science Research and Development Fund

**START/*DÉBUT***: *1986*

## 0503-24

Coleman, R
Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Microbiological processes in waste management**

To study and provide data/information on domestic, industrial and agricultural wastes using microbiological processes and systems.

Financing/*Financement:* Alberta Agriculture

Alberta Technology Research & Telecommunications

Alberta Environment

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1991 12*

## 0503-25

Danielson, R
Okazawa, N
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Landtreatment of oily waste sludges**

To determine the effects of landtreatment with oily wastes on the long term use of the land for agronomic purposes, to determine the uptake of undesirable organic compounds and heavy metals by crops, to determine the effects of landtreatment on surface and groundwater quality and to determine the effectiveness of landtreatment as a disposal method for oilfield wastes. Reports available.

Financing/*Financement:* Canadian Petroleum Association

Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986 01*

## 0503-26

Dibbs, H
(819) 953-1187

Environment Canada; Conservation and Protection; Technology Development Branch

**Performance monitoring of the Swan Hills Hazardous Waste Incinerator using surrogate compounds**

To investigate the use of sulphur hexafluoride and a chlorinated fluorocarbon to provide a continuous, reliable and economical means of determining the destruction efficiency of the Swan Hills incinerator. Final report available, March 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

Alberta Environment

Alberta Special Waste Management Corporation

British Columbia Ministry of Environment and Parks

$125 000

**START/*DÉBUT***: *1988 03* **END/*FIN***: *1988 09*

## 0503-27

Dibbs, H
(819) 953-1187

Environment Canada; Conservation and Protection; Technology Development Branch

**The evaluation of mobile and stationary facilities for the destruction of PCBs**

Up-to-date evaluation of the current status of PCB destruction facilities for their application in Canada. Published as an Environment Canada report, EPS 3/HA/5, May 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

$10 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 03*

## 0503-28

Dixon, J
(416) 747-4000

Canadian Standards Association

**Development of a laboratory qualification standard (code) for laboratories analyzing industrial wastes**

To develop a qualification standard for laboratories analyzing industrial wastes required by Ontario Regulation 309. The standard is to be developed by a consensus approach and must be capable of being used with any subsequent certification programs that the Ministry may wish to proceed with at a future date. Output: CSA Standard Z201.

Financing/*Financement:* Ontario Ministry of Environment

$41 500

**START/*DÉBUT*:** *1986 08*

## 0503-29

Donner, A
(416) 961-1474

ARA Consultants Ltd.

**To Conduct A Study on the Structure of the Liquid Waste Management (Transportation) Sector in Ont.**

Determine the physical, economnic and financial characteristics of the liquid industrial waste haulage industry in Ontario. Inlcuded will be a review of Provincial environmental and licensing regulations on performance and cost effectiveness of the industry.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$32 300

**START/*DÉBUT*:** *1987 02* **END/*FIN*:** *1987 07*

## 0503-30

Farquhar, G
McBean, E
(519) 885-1211

Department of Civil Engineering; University of Waterloo

**Behaviour, detection and control of hazardous immiscible liquid movement in soil**

To conduct laboratory scale experiments to study the movement, retention and control of hazardous immiscible liquids (HIL) in soil.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$172 700

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0503-31

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Persistence of pesticide residues**

Assess land application as a method for disposal of dilute mixed pesticide residue waste. The project determined the persistence of active ingredients under field conditions and effects on nitrate-nitrogen concentrations. Report available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$12 500

**START/*DÉBUT*:** *1986 05* **END/*FIN*:** *1987 06*

## 0503-32

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Pesticide residue treatment and disposal - evaluation of a biodegradation, photodegradation and evaporation pesticide treatment system**

Examine the effectiveness and feasibility of a lined soil-bed system for the treatment and disposal of pesticide residues. An ongoing cooperative study.

Financing/*Financement:* Environment Canada, Conservation & Protection

Saskatchewan Environment and Public Safety

Agriculture Canada

$27 000

**START/*DÉBUT*:** *1987 05*

## 0503-33

Ganczarczyk, J
(416) 978-3141

Department of Civil Engineering; Faculty of Applied Science and Engineering; University of Toronto

**Development of Polysulfide Technology for Treatment of Concentrated Spent Cyanide Liquors**

To develop a simple, safe and inexpensive method for detoxification of concentrated spent cyanide liquors generated in electroplating shops.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$33 000

**START/*DÉBUT*:** *1986 03* **END/*FIN*:** *1987 05*

## 0503-34

Gosselin, Y
(418) 644-3586

Ministère de l'Environnement; Direction de l'assainissement agricole

**Usine pilote de traitement et de valorisation du lisier de porc.**

Identifier un procédé de traitement et de valorisation opérationnel, économique et simple du lisier de porc afin de solutionner le problème des surplus de fumier produits dans les régions à forte concentration d'élevage. Le projet a également pour objectif d'optimiser un procédé afin d'établir les critères et les coûts de design d'unités opérationnelles.

Financing/*Financement:* Québec, ministère de l'Environnement

$2 200 000

**START/*DÉBUT*:** *1985* **END/*FIN*:** *1988*

## 0503-35

Grove, G
(306) 975-5741

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Deep well disposal**

To understand the interactions occurring between the injected waste fluids and the host aquifer and consequently their influence on the migration of contaminants. To estimate the potential for transboundary flow of contaminants following injection into the deep subsurface.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0503-36

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Biodégradation des cyanures dans les environnements miniers.**

Sélection et adaptation de souches bactériennes indigènes à la dégradation des cyanures des effluents de mines d'or.

Financing/*Financement:* Fonds personnel

## 0503-37

Gutteridge, B
Osborne, J
(416) 235-6001

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of volatile organic compounds (MISA test groups 16, 17, 18) in municipal sewage sludge**

To develop method for the analysis of volatile organic compounds in municipal sewage sludge.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1990 03*

## 0503-38

Hall, K
(604) 228-6474

University of British Columbia

**Role of carbon in biological phosphorus removal and bioassays for organic contamination**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0503-39

Harrison, J
(306) 780-6390

Environment Canada; Conservation and Protection; Environmental Protection

**Landfarming of oily waste**

To investigate the viability of applying oily waste from heavy oil to agricultural land. The addition of oily waste leads to improved agricultural land.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

$380 000

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1991 06*

## 0503-40

Harrison, J
(306) 780-6465

Environment Canada; Conservation and Protection; Environmental Protection

**Anaerobic treatment abattoir wastes**

To test the efficiency of an anaerobic upflow filter in treating liquid effluent from an abattoir. A technology transfer project.

Financing/*Financement:* Environment Canada, Conservation and Protection

$20 000

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1988 03*

## 0503-41

Hitchon, B
(403) 450-5113

Alberta Research Council

**Assessment of fluid-rock interaction, as related to subsurface waste disposal, in oil sands etc.**

To identify and assess the nature of man-imposed fluid-rock reactions in the oil sands and heavy oil areas of Alberta and adjacent areas.

Financing/*Financement:* Environment Canada, Conservation & Protection

$385 000

**START/*DÉBUT*:** *1983 11* **END/FIN:** *1986 03*

## 0503-42

Hoffman, J
(306) 787-6198

Saskatchewan Environment and Public Safety

**Seepage monitoring at sewage lagoons by IR photography**

To monitor seepage impacts at municipal lagoons through infrared photography.

Financing/*Financement:* Saskatchewan Environment and Public Safety

**START/*DÉBUT*:** *1983 07*

## 0503-43

Jones, A
unavailable

Protose Separations Inc.

**Use of whey wastes in manufacture of high grade protein and lactose**

To investigate the manufacture of high grade protein and lactose from whey wastes at pilot scale.

Financing/*Financement:* Ontario Ministry of Environment

$488 000

**START/*DÉBUT*:** *1988 07*

## 0503-44

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment technology of oil and gas offshore wastes (PERD project 67201)**

Characterize and evaluate performance and costs of available and practical technologies for the treatment of wastes from the offshore petroleum industry.

Financing/*Financement:* Panel on Energy Research and Development

$340 000

**START/*DÉBUT***: *1982 07* ***END/FIN***: *1986 12*

## 0503-45

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Treatment of toxic oil sands wastewater and tailing pond sludges (PERD project 24164)**

Assess and develop treatment technologies to treat toxic oil sand plant process wastewaters.

Financing/*Financement:* Panel on Energy Research and Development

$353 600

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1986 03*

## 0503-46

Kosaric, N
(519) 661-3119

University of Western Ontario; Dept. of Chemical & Biochemical Engineering

**Research projects in biochemical and food engineering**

Projects include: anaerobic sludge granulation process treatment of industrial wastewaters in a pilot plant for treatment of pulp and paper wastes - study hydrodynamic conditions affecting performance of UASBRs; detoxification of industrial wastewaters with algae - removal and degradation of chlorinated hydrocarbons and develop a novel photobioreactor system with internal reactor illumination; breaking industrial emulsions with specific microbes of particular interest in enhanced oil recovery and petroleum industry. Reports and publications are available with some restrictions.

Financing/*Financement:* Paques Lavalin

Natural Sciences & Engineering Research Council

$494 758

**START/*DÉBUT***: *1988 02* ***END/FIN***: *1991 01*

## 0503-47

Ladwig, G
Lega, R
(416) 235-5982

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Sludge analysis (phenols, herbicide acids and base/neutral compounds)**

To develop method for the analysis of phenols, herbicide acids and base neutral compounds in municipal sludge.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0503-48

Ladwig, G
Lega, R
(416) 235-5982

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of OC, CB, and PCBs (MISA test groups 22, 24, and 27) in municipal sewage sludge**

To develop method for the analysis of OC, CB, and PCBs in municipal sewage sludge.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0503-49

Lamond, D
(514) 849-9222

Nitrochem Inc.

**A vapour mechanical compression system for evaporating and recovering nitrogen from an effluent**

To demonstrate the use of mechanical vapour compression technology for evaporating and recovering nitrogen from a fertilizer plant effluent stream and surface drainage collection system. Final report due March, 1988.

Financing/*Financement:* Panel on Energy Research and Development

Nitrochem Inc.

$2 750 000

**START/*DÉBUT***: *1984 01* ***END/FIN***: *1988 03*

## 0503-50

Langlois, C
(514) 283-9995

Centre Saint-Laurent; Environnement Canada

**Télédétection pour la dispersion de rejets d'eaux usées dans le milieu aquatique**

Télédétection par satellite et avion de la dispersion des effluents industriels dans le St-Laurent (Sorel - Valleyfield).

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

Canada Centre for Remote Sensing

$90 000

**START/*DÉBUT***: *1988 09* ***END/FIN***: *1990 02*

## 0503-51

Lo, K
(604) 228-4880
University of British Columbia

**Automation of a novel chromatographic process for separation and purification of organic compounds**

none available

Financing/*Financement:* Agriculture Science Research and Development Fund

## 0503-52

Lo, K
(604) 228-4880
University of British Columbia

**Gas chromatographic automatic sampler and work station**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0503-53

Lo, K
(604) 228-4880
University of British Columbia

**An integrated waste treatment and bioenergy production system for wet biomass**

none available

Financing/*Financement:* National Science & Engineering Research Council

$73 000

**START/*DÉBUT***: *1985*

## 0503-54

MacEachern, R
(902) 421-6552
Metropolitan Authority of Halifax

**Landfill leachate treatment system**

To develop and demonstrate an effective on-site anaerobic leachate treatment system.

Financing/*Financement:* Panel on Energy Research and Development

Metropolitan Authority of Halifax

$2 600 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1988 03*

## 0503-55

Major, D
(416) 671-2600
Beak Consultants Ltd.

**In situ biodegradation of chlorinated solvents as a remedial technology for contaminated groundwater**

To determine factors and processes governing in situ transformation and degradation of tetrachloroethylene in the groundwater at a chemical transfer facility, thereby furthering understanding of microbial processes at spill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$80 000

**START/*DÉBUT***: *1989 07* **END/*FIN***: *1991 06*

## 0503-56

Mavinic, D
(604) 228-4752
University of British Columbia

**Pilot scale studies on sludge management**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1986*

## 0503-57

Mavinic, D
(604) 228-4752
University of British Columbia

**Comparison of aerobic and anaerobic processes in treatment of mixed sludges**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0503-58

McBride, R
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Treatment of Landfill Leachate by Spray Irrigation**

To evaluate leachate spray irrigation as an economic, environmentally-sound, and long-term solution to one particular sanitary landfill seepage problem (Muskoka Lakes) with a view to providing in the long-term recommendations and implementation procedures for this type of waste-disposal across the province.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$82 500

**START/*DÉBUT***: *1986 05* **END/*FIN***: *1988 06*

## 0503-59

McLellen, W
(416) 252-0073
Waste Management Consultants

**Demonstration of proprietary ultrafilter and zero discharge rinsing on recovery of metal finishing wastes**

To demonstrate effectiveness of equipment in metal recovery from wastes and treatment to allow in-plant re-use of wastes.

Financing/*Financement:* Ontario Ministry of Environment

$6 500

**START/*DÉBUT***: *1988 06*

## 0503-60

Metcalfe, C
(705) 748-1272
Trent University; ERS Program

**Carcinogenicity testing of industrial effluents using a rainbow trout assay**

To develop a carcinogenicity assay using fish which can be used for monitoring of industrial effluents for carcinogenic activity. To fractionate extracts of carcinogenic effluents in order to identify classes of compound which warrant routine monitoring under MISA.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$128 700

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1992 04*

## 0503-61

Moores, R
(709) 772-4087
Environment Canada; Conservation & Protection

**Strategy for chronic and acute toxicity testing**

Develop a strategy and recommendation for chronic and acute toxicity testing related to offshore oil development using Daphnia megna and stickleback. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1988 04*

## 0503-62

Moores, R
(709) 772-4087
Environment Canada; Conservation & Protection

**Environmental effects monitoring program**

Develop an effluent monitoring methodology in support of environmental effects monitoring program related to chronic hydrocarbon discharge to the marine environment. Report available in 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1988 04*

## 0503-63

Narasiah, S
(819) 821-7109
Université de Sherbrooke; Département de génie civil

**Traitement des eaux résiduaires provenant des eaux industrielles mixtes**

Trouver une méthode de traitement des déchets (solides + liquides) contenant des résidus toxiques provenant de l'industrie.

Financing/*Financement:* Service central de réservoirs Inc

$22 000

## 0503-64

Narasiah, S
(819) 821-7109
Université de Sherbrooke; Département de génie civil

**Restauration du parc à résidus de la East Sullivan par l'utilisation de résidus organiques**

Offrir une contribution valable à la résolution d'un problème de gestion des boues de la ville de Val d'Or, de gestion de résidus forestiers et de réaménagement de résidus miniers de la région.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$33 100

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1988 02*

## 0503-65

Oldham, W
(604) 228-3907
University of British Columbia

**Control of biological nutrient removal efficiency**

none available

Financing/*Financement:* National Science & Engineering Research Council

## 0503-66

Oldham, W
(604) 228-3907
University of British Columbia

**Optimization of phosphorus removal and sludge stabilization for domestic sewage**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT*:** *1985 04*

## 0503-67

Osborne, J
(709) 772-5488
Environment Canada; Conservation & Protection

**Treatment technology for produced water at offshore oil production sites**

Develop new and/or improved technology to treat waste water - reduce oil discharges.

Financing/*Financement:* Panel on Energy Research & Development

$170 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1990 08*

## 0503-68

Osborne, J
(709) 772-4047
Environment Canada; Conservation & Protection

**Development of a test protocol for assessing biodegradabilities of drilling fluid base oils**

The objective is to be able to assess the rate of biodegradation of oil discharged during well drilling, by assessing it at the approval stage. Therefore allowing use of most biodegradable oil. Report available in 1990.

Financing/*Financement:* Panel on Energy Research & Development

$150 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1990 03*

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## 0503-69

Packman, G
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Environmental studies design criteria**

1) To define natural variability of sediment physical/chemical parameters in the Beaufort Sea. 2) To determine optimum number of sample replicates for effective monitoring programs. 3) To test strategies and parameters for inclusion in monitoring guidelines.

Financing/*Financement:* Panel on Energy Research and Development

$154 300

**START/*DÉBUT***: *1984 06* ***END/FIN***: *1987 03*

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## 0503-70

Patoine, J
(418) 832-2977

MAPAQ de L'Islet

**Evolution du rendement de trémies 'wet feeders' sur les performances d'élevage de porcs en engraissement.**

Mesurer l'efficacité de trois nouveaux types de trémies (moulée et eau en même temps) comparativement à des trémies conventionnelles; vérifier la quantité de lisier produit pour chacun des systèmes; vérifier la propreté des parquets et l'écoulement du lisier dans les rigoles.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$27 000

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 01*

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## 0503-71

Patry, G
(416) 525-9140

Dept. of Civil Engineering; McMaster University

**Modular multi-purpose modelling system for the simulation of wastewater treatment dynamics**

To compile a library of dynamic models for wastewater treatment processes, develop software for simulation and graphical representation of dynamic models, examine applicability of expert systems for improved treatment operations. Interim report: Knowledge-based Systems in Wastewater Engineering, Oct. 1988.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

Lyonnaise des eaux (France)

Société québécoise d'assainissement des eaux

$367 000

**START/*DÉBUT***: *1987 05* ***END/FIN***: *1989 12*

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## 0503-72

Petranovic, M
Wyhovszky, G
(416) 235-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Introduction of Gas Chromatography Fourier Transform Infrared Spectroscopy for Mixed Waste Analysis**

To combine a powerful separation technique (GC) with a diagnostic analytical instrument (infrared) for identification of volatile organic compounds in mixed wastes.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$60 000

**START/*DÉBUT***: *1987 08*

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## 0503-73

Pinard, G
(514) 248-3321

MAPAQ de Bedford

**Utilisation de géotextiles à fine porosité (comme membrane d'imperméabilisation au sol) dans la construction de réservoir et plateforme à fumier en sol grossier et mince.**

Vérifier la faisabilité d'utiliser un géotextile pour fosse à lisier, construire à moindre coût une fosse à lisier.

Financing/*Financement:* Entente auxiliaire Can-Qué sur le développement agro-alimentaire

$23 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1990 04*

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## 0503-74

Powell, G
(416) 485-7715

Gore & Storrie Limited

**Demonstration of the Phoredox Process at Lakeview WPCP**

To evaluate the effect of the introduction of the Phoredox process on overall plant performance.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$25 000

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1988 01*

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## 0503-75

Powell, M
(519) 925-3108

General Delivery

**Development of methods for the analysis of alkyl lead, tin and mercury compounds in effluent, surfaces and groundwater**

To develop a method for the measurement of alkyl lead, tin and mercury species such as tetraethyl lead, butyl tin and methyl mercury in water or liquid effluent samples.

Financing/*Financement:* Ontario Ministry of Environment

$65 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0503-76

Quigley, R
(519) 661-3344

Faculty of Engineering Science; University of Western Ontario

**Non-Polar Organic Liquids in Domestic Waste Leachate, Hydraulic Conductivity of Clay Liners**

To determine the threshold concentrations of selected, non-polar, low dielectric liquid hydrocarbons added to domestic waste leachate, at which large increases in hydraulic conductivity of natural and/or compacted clay barriers would occur.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$48 000

**START/*DÉBUT***: *1985 08* **END/*FIN***: *1987 05*

## 0503-77

Quigley, R
(519) 661-3344

University of Western Ontario; Department of Civil Engineering

**Effect of water soluble organic liquids in domestic waste leachate on the integrity of clay barriers**

The safety of clay barriers assessed by hydraulic inductivity testing.

Financing/*Financement:* Ontario Ministry of Environment

$72 000

**START/*DÉBUT***: *1986 10* **END/*FIN***: *1989 07*

## 0503-78

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Indirect methods for determining brine migration**

To assess the effectiveness of geophysical methods for determining subsurface migration of potash brine. Final report available.

Financing/*Financement:* Potash Corporation of Saskatchewan

$16 000

**START/*DÉBUT***: *1984 06* **END/*FIN***: *1984 10*

## 0503-79

Reid, K
(306) 933-8542

Potash Corporation of Saskatchewan

**Deep well injection of potash brine wastes**

To determine the most cost effective methods for constructing, operating and maintaining an injection well for disposing of waste potash brine. Final report available.

Financing/*Financement:* Potash Corporation of Saskatchewan

$1 1 250

**START/*DÉBUT***: *1984 11* **END/*FIN***: *1985 08*

## 0503-80

Robitaille, L
(418) 871-3469

Lapel; Groupe-Conseil inc

**Simulation d'un système intégré de gestion du transport du lisier de porc**

Définir les exigences (fournisseurs, utilisateurs, contraintes) d'un système de gestion du transport du lisier de porc. Effectuer des simulations d'une saison de transport selon différents scénarios. Evaluer ses chances de succès et sa pertinence en tant que solution aux problèmes des surplus de lisier de porc.

Financing/*Financement:* Québec, ministère de l'Environnement

$35 598

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1989 03*

## 0503-81

Rogers, E
unavailable

Metal Recovery Industries Inc.

**Recovery of tin and steel from used cans**

To determine means of segregating and preparing cans for integration into tin and steel recovery process.

Financing/*Financement:* Ontario Ministry of Environment

$48 000

**START/*DÉBUT***: *1988 07*

## 0503-82

Ross, G
(819) 997-1222

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of solid and liquid waste management practices for flue gas desulphurization**

Recommended waste/wastewater management practices for flue gas desulphurization incorporated in environmental codes of practice for steam electric power generation.

Financing/*Financement:* Panel on Energy Research and Development

$1 051 000

**START/*DÉBUT***: *1981 04* **END/*FIN***: *1989 03*

## 0503-83

Roy, C
(418) 656-7406

Université Laval; Département de génie chimique

**Recyclage des résidus pétroliers par pyrolyse sous vide.**

Développer et expérimenter une Unité de Développement de Procédé dont le but est de transformer (par décomposition thermique sous vide) les résidus pétroliers provenant des usines de raffinage du pétrole en huiles recyclables directement dans le procédé de raffinage. Les résidus solides et secs résultant du traitement peuvent être par la suite enfouis sans danger pour l'onvironnement.

Financing/*Financement:* Ultramar Canada Inc.

Canada, ministère de l'Energie, des Mines et des Ressources

$580 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1991 05*

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## 0503-84

Rupke, G
(416) 853-1223

G. Rupke Associates

**Evaluation of zero discharge technology for tannery operations**

To evaluate state-of-the-art equipment and processes for minimization or elimination of tannery wastes by recycling and re-use of wastes.

Financing/*Financement:* Ontario Ministry of Environment

$16 700

**START/*DÉBUT***: *1988 06*

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## 0503-85

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Empilage de la boue rouge**

Remplacer la méthode d'entreposage des déchets. Le système d'entreposage par bassins de sédimentation est remplacé par un système d'empilage de la boue rouge.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$21 000 000

**START/*DÉBUT***: *1982 01* ***END/FIN***: *1988 12*

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## 0503-86

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Traitement du lixiviat de la brasque.**

Décomposition des cyanures en solution. Traitement du fluorure en solution.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$300 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1988*

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## 0503-87

Salin, E
(514) 392-5784

Department of Chemistry; McGill University

**Methods for the direct analysis of solids by inductively coupled plasma atomic emission spectrometry**

The development of instrumentation and methodologies which will allow the direct analysis of solid and difficult liquid samples.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$125 300

**START/*DÉBUT***: *1986 09* ***END/FIN***: *1990 04*

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## 0503-88

Schmidt, J
Zaidi, A
(416) 336-4541

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of aqueous effluents from in situ bitumen/heavy oil recovery operations**

To develop and demonstrate cost-effective technologies for the treatment of wastewaters from bitumen/heavy oil operations. Technologies will be such as to permit the recycling of wastewaters, or surface water discharge. Interim reports available from the project investigator.

Financing/*Financement:* Panel on Energy Research and Development

Department of Supply and Services Canada

Alberta Oil Sands Technology & Research Authority

Environment Canada, Conservation and Protection

Industry

$5 581 200

**START/*DÉBUT***: *1982* ***END/FIN***: *1992 03*

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## 0503-89

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Waste sludges produced by the Canadian natural gas processing industry**

To develop, validate and publish a cost-effective methodology for determining the characteristics and environmental significance of natural gas plant sludges. To examine all potential sludge treatment/ disposal options and associated cost implications. Final draft report is due March 1990.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Research Council

$540 000

**START/*DÉBUT***: *1984 05* ***END/FIN***: *1990 03*

## 0503-90

Shearer, R
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea baseline monitoring program for Amauligak drilling and production activities**

To conduct a baseline survey near the Amauligak F-24 wellsite to provide data which can be used as a benchmark for future environmental effects monitoring programs.

Financing/*Financement:* Northern Oil and Gas Action Program

Baseline Studies Fund

$50 000

**START/*DÉBUT*:** *1987 07* **END/FIN:** *1988 03*

## 0503-91

Smith, D
(613) 836-2594
Water and Earth Science Associates Ltd.

**A Field Evaluation of the Overland Flow Method for the Removal of Organic Compounds from Groundwater**

Provide a proven low cost treatment alternative for part per billion range volatile, non-volatile, organic compounds derived from groundwater remedial sites. Concentrations must be reduced to levels acceptable for surface discharge into receiving water bodies. The system will also provide a means by which iron may be eliminated from discharge streams without expensive pre-treatment.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 03*

## 0503-92

Smoragiewicz, W
(514) 282-3922
Université du Québec à Montréal; Département des sciences biologiques

**Biodégradation des boues flottantes des abattoirs et valorisation des boues stabilisées obtenues.**

Les résultats préliminaires de fermentation des boues flottantes d'un abattoir ont été très prometteurs. Nous obtenons un résidu qui correspond à une forte diminution de volume, et à l'apparence de 'cake argileux' dont le taux des lipides est très bas. Ce procédé pourrait être très rapidement appliqué aux abattoirs en butte à des problèmes urgents de disposition des boues. De plus, nous pourrions étudier des possibilités de valorisation (autres que leur envoi aux fondoirs) des boues stabilisées.

Financing/*Financement:* Québec, ministère de l'Environnement

Association des abattoirs avicoles du Québec

$50 343

**START/*DÉBUT*:** *1988 03* **END/FIN:** *1988 12*

## 0503-93

Smoragiewicz, W
Dubeau, H
(514) 282-3922
Université du Québec à Montréal; Département des sciences biologiques

**Développement d'un procédé visant à améliorer la gestion des boues résiduaires des stations d'épuration des eaux usées.**

L'objectif général de ce projet de recherche est de diminuer la charge organique des boues résiduaires des stations d'épuration des eaux usées tout en augmentant la quantité de biogaz produite par fermentation méthanogénique, et ce faisant appel à la biotechnologie.

Financing/*Financement:* Fonds institutionnel de recherche

$15 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988*

## 0503-94

Sommerstad, H
(306) 780-6001
Environment Canada; Conservation and Protection; Environmental Protection

**Pesticide disposal pit**

To study the degradation of dilute pesticide residues in a lined pit and evaluate the method for application to Saskatchewan Environment. A technology application/transfer project.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0503-95

Sutherland, D
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Criteria for the control and monitoring of petroleum development impacts on the Mackenzie River**

To develop criteria for the regulation and monitoring of petroleum waste discharges to the Mackenzie River through the assessment of impacts on water and sediment quality and biota (toxicity and bioaccumulation). Summary report available in 1988.

Financing/*Financement:* Northern Oil and Gas Action Program

$330 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 03*

## 0503-96

Sutherland, D
(403) 873-3456
Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of impact detection techniques and approaches at a gold mine in the NWT - Lupin mine**

To monitor the impact of gold mining effluents on water quality, sediment, and biota in Contwoyto Lake; and to evaluate monitoring techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection

$24 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1986 03*

## 0503-97

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Research into the use of filtration for tar-sands tailings pond water treatment, for purposes of recycling**

(as above) Final report April 1989.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

Syncrude Canada Ltd.

$146 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0503-98

Tonelli, F
(416) 639-6320

Zenon Environmental Inc.

**A case history of cheese whey concentration by reverse osmosis**

1. To document the background leading to the application of osmosis technology for concentration of cheese whey for cattle feed. 2. To observe and monitor the process in operation at a Canadian cheese plant, in terms of process efficiency and environmental compliance. 3. To provide a technical, environmental, and economic evaluation of the process and equipment utiliized and make recommendations for design and operating practices at a new installation of similar scale.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$23 900

**START/*DÉBUT***: *1985 08* ***END/FIN***: *1986 02*

## 0503-99

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Développement d'un test écotoxicologique sublétal avec du zooplancton (ATP)**

Bioessai de toxicité à count terme et sublétal pour zooplancton au niveau biochimique.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

$30 000

**START/*DÉBUT***: *1988 08* ***END/FIN***: *1989 12*

## 0503-100

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Bilan du développement écotoxicologique aux laboratoires de la DPE à Longueuil**

Evaluation de la démarche d'évaluation écotoxicologique integrée développée à la DPE (laboratoires à Longueuil).

Financing/*Financement:* Environnement Canada, Conservation et protection

$9 000

**START/*DÉBUT***: *1988 06* ***END/FIN***: *1988 12*

## 0503-101

Veilleux, J
(418) 643-7994

Ministère l'Energie et Ressources; Direction recherche et développement

**Utilisation de biomasse, de boues d'égout et de lisiers sur les sols forestiers.**

1-Amélioration des propriétés physico-chimiques des sols pour assurer la croissance normale d'arbres plantés. 2-Augmentation du bilan humique des sols et de la teneur en éléments nutritifs. 3-Détermination des quantités optimales ou maximales qui peuvent être appliquées. 4-Vérification des effets résiduels et des toxicités possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$220 000

**START/*DÉBUT***: *1985* ***END/FIN***: *1990 04*

## 0503-102

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Facteurs de succès pour la valorisation de la biomasse au Québec**

Financing/*Financement:* Centre québécois de valorisation de la biomasse

$25 000

**START/*DÉBUT***: *1986 06* ***END/FIN***: *1987 06*

## 0503-103

Veuilleux, J
(418) 651-8173

Ministère l'Energie et Ressources; Direction recherche et développement

**Recherche sur l'emploi de biomasse forestière et de lisiers en pépinières.**

Etudie les effets de l'utilisation en pépinière de biomasse forestière et de lisiers sur les propriétés physico-chimiques et biologiques des sols. Mesure les effets sur la productivité et la production de plants et semis en pépinière. Détermine les quantités optimales à appliquer. Vérifie-les effets résiduels et toxiques possibles.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$115 000
**START/*DÉBUT*:** *1981* **END/*FIN*:** *1983*

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## 0503-104

Wiens, J
(604) 387-9948

British Columbia Ministry of Environment & Parks

**Detection of lakeshore subsurface inflows from septic tanks and their effects on lake water quality**

To utilize a boat mounted fluorometer system for foreshore scanning of lake water near the lake bottom, and for sampling lake water to determine locations of inflows and possible effects of septic tank drainfields on water quality.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

**START/*DÉBUT*:** *1985*

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## 0503-105

Wilcock, A
(519) 824-4120

University of Guelph

**Recycling of textile dyebath effluents**

To test the efficiency of a new, commercially available electrochemical cell in the purification of environmentally hazardous textile dyebath effluents. These effluents contain expensive dyes and other chemicals that, if they can be precipitated from the effluent and reused, represent a substantial economic saving. The colourless supernatant will be tested for biological toxicity and for potential industrial recycling so that manufacturers will have the option of safely discharging the treated effluent to sewers or recycling it in industrial applications.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$49 900

**START/*DÉBUT*:** *1988 06* **END/*FIN*:** *1991 05*

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## 0503-106

Wishart, D
(403) 420-5210

Interprovincial Pipe Line Limited

**Water quality monitoring in relation to hydrostatic pipeline testing**

To quantitatively assess chemical and physical changes to water quality that result from hydrostatic pipeline testing. Reports avaible for viewing at the National Energy Board, Ottawa.

Financing/*Financement:* Interprovincial Pipe Line Company

$120 000

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1987 11*

# 06

## OTHER

## *AUTRES*

## 0601-1

Albert, P
(514) 848-3422
Université Concordia; Département de biologie

**Chemosensory bases of host-plant selection in insects.**

Identifier les mécanismes responsables pour la sélection de la plante-hôte par la tordeuse des bourgeons de l'épinette. Comportement. Electrophysiologie. Organes sensoriels.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$54 231

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0601-2

Anderson, P
(514) 848-3391
Université Concordia; Laboratoire d'écotoxicologie

**Modèles écotoxicologiques de polluants chimiques dans l'environnement aquatique**

Screens chemical pollutants as risks to the wellbeing of aquatic organism by studying their availability and toxicity; investigates through the use of laboratory models, the effects of toxicants on organism, their populations and communities; creates water quality criteria.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$60 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0601-3

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Synthetic and naturally occuring phototoxins for insect control**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$240 000

**START/*DÉBUT***: *1986 11* ***END/FIN***: *1989 10*

## 0601-4

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Phytochemical control of European corn borer**

none given

Financing/*Financement:* Ontario Ministry of Agriculture & Food

$234 190

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1989 03*

## 0601-5

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Resistance mechanisms in maize**

none given

Financing/*Financement:* International Development Research Centre

$266 644

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1989 07*

## 0601-6

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Significance of phenolic acid-carbonhydrate complexes in resistance of grain to pests and in processing**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$300 000

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1991 10*

## 0601-7

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Phytochemically mediated interactions in plant insect relations**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$74 994

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1992 03*

## 0601-8

Arnason, J
(613) 564-3458
University of Ottawa; Biology

**Secondary metabolites as naturally occuring protective agents in plants**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$111 555

**START/*DÉBUT***: *1983 04* ***END/FIN***: *1989 03*

## 0601-9

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**IJC quality control studies**

Provide five interlaboratory quality control comparison studies to laboratories in the Great Lakes Basin that support the IJC-Canada U. S. Great Lakes Quality Agreement.

Financing/*Financement:* Environment Canada, Conservation and Protection

$2 000 000

**START/*DÉBUT***: *1978 04* ***END/FIN***: *ongoing*

## 0601-10

Baarschers, W
(807) 343-8256

Lakehead University; Department of Chemistry

**Study of microbial degradation of triclopyr (garlon)**

Analysis of the environmental persistence of certain herbicides in terms of their microbial degradation and absorption. Annual progress report submitted; a final report will be submitted.

Financing/*Financement:* Ontario Ministry of Natural Resources

$45 160

**START/*DÉBUT***: *1985 04*

## 0601-11

Barber, K
(705) 949-9461

Sault College of Applied Arts & Technology

**Relative sensitivity to Bacillus Thuringiensis of non-target caterpillers potentially serving as food for young grouse chicks**

Establish and supplement laboratory cultures of the most abundant and important species of caterpillars feeding on V. angustifolium. Establish greenhouse production of V. angustifolium for foliage production. Determine the relative sensitivity to B.t. of the most abundant and important species. Produce a field discrimination key to at least the most abundant and important species of caterpillars on V. angustifolium. Describe the basic phenologies and life histories of the most abundant and important species.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$15 400

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-12

Baril, A
(819) 997-6131

Environment Canada; Canadian Wildlife Service

**Estimation of pesticide residues on wildlife foods**

To provide an improved information base in order to estimate dietary exposure of wildlife to pesticides, report by the end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$19 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-13

Barron, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of root-knot nematode Meliodogyne hapla in economic host plants destroying fungi**

To isolate nematode-destroying fungi from soils for experimental seed treatment.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 400

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-14

Bendell, J
(416) 978-2403

University of Toronto

**Impact of bacillus thuringiensis on chicks of spruce grouse, non-target insects, and small birds and mammals**

Determine the foods of Spruce Grouse chicks up to 3 weeks of age by direct observation and collecting them. Test the hypotheses: The application of B.t. at operational levels does not affect the abundance of insects of low vegetation and the forest floor, especially larval Lepidoptera. Larval Lepidoptera are not needed for the growth and survival of chicks of Spruce Grouse. Other birds, especially the White-Throated Sparrow, and small mammals, especially the Masked Shrew are not affected by the application of B.t. at operational levels.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$14 450

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-15

Bernier, A
(514) 283-2349

Environment Canada; Environmental Protection

**Comparison between established practices and integrated pest management**

To assess the extent of reduced pesticide use among farmers using pesticides only and integrated pest management techniques.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$34 200

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-16

Bernier, A
(514) 283-2349
Environment Canada; Environmental Protection

**Farm waste management practices**

To determine if disposal of agricultural pesticide waste is understood by farmers.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0601-17

Berrill, M
(705) 748-1455
Dept. of Biology; Trent University

**Effects of pyrethroid pesticides on hatching success and metamorphosis of anuran amphibians**

none given

Financing/*Financement:* Trent University

World Wildlife Fund

Natural Sciences & Engineering Research Council

$80 000

**START/*DÉBUT*:** *1988 04*

## 0601-18

Birkholz, D
(403) 435-7255
Environment Canada; Conservation and Protection; Environmental Protection

**Glyphosate methodology**

To develop an analytical method for measuring glyphosate in water.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1986 07*

## 0601-19

Birkholz, D
(403) 435-7255
Environment Canada; Conservation and Protection; Environmental Protection

**Carbofuran methodology**

To develop an analytical method for measuring carbofuran.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1987 01*

## 0601-20

Boag, P
(613) 545-6128
Biology; Queen's University

**Behaviour and reproduction in zebra finches following sublethal exposure to fenitrothion**

unavailable

Financing/*Financement:* Wildlife Toxicology Fund

$22 650

**START/*DÉBUT*:** *1987*

## 0601-21

Boisvert, M
(819) 376-5053
UQTR; Groupe de recherche sur les insectes piqueurs (GRIP)

**Etude de la persistance d'un insecticide biologique (Bacillus thuringiensis variété israelensis) dans l'environnement aquatique.**

Etudier la persistance de l'activité toxique du larvicide sous nos conditions environnementales; étudier l'importance des facteurs environnementaux sur la persistance du B.T.I.; déterminer le rôle des cellules végétatives et des spores de B.T.I. dans un cas de recyclage de l'activité toxique résiduelle.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

Organisation mondiale de la santé

$18 000

## 0601-22

Boland, G
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Biological control of Sclerotinia sclerotiorum in canola and white beans**

Evaluate the potential for fungi isolated from canola and white bean flowers to prevent diseases caused by Sclerotinia sclerotiorum.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$14 500

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-23

Borden, J
(604) 291-4292
Simon Fraser University

**Integrated management of bark beetles**

none available

Financing/*Financement:* Science Council of British Columbia

National Science & Engineering Research Council

**START/*DÉBUT*:** *1984 09* **END/FIN:** *1988 09*

## 0601-24

Boudier, H
(514) 486-2509

Aserne Consultants Enr.

**Analyse comparative des pratiques liées aux pesticides chez les producteurs utilisant les methodes**

Comparison des attitudes et opinion des producteurs agricoles utilisant des methodes traditionnelles de lutte contre les rongeurs et ceux qui utilisent la lutte intégrée. Un rapport sera disponible en Mai 1988.

Financing/*Financement:* Environnement Canada, Conservation et Protection

Environnement Canada, Conservation et Protection

$40 500

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 05*

## 0601-25

Brown, D
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Pesticide levels in agricultural watersheds in Manitoba - (Stephenfield Reservoir)**

To identify concentrations and determine use impacts of agricultural pesticides in Manitoba watersheds. The monitoring and evaluation is ongoing and is being carried out in consultation with several provincial government and federal government agencies.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Environment Canada, Conservation and Protection

Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1989 00*

## 0601-26

Brown, D
Goldsborough, L
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Impact of the forestry herbicide glyphosate on aquatic environment**

To determine the aquatic impacts of the aerial spraying of forestry herbicides within Manitoba. The primary focus is on the herbicide glyphosate and its effects on algal periphyton, emergent vegetation and submergent vegetation.

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

Canada/Manitoba Forest Renewal Agreement

$209 500

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1990 03*

## 0601-27

Brown, R
(519) 824-4120

University of Guelph; School of Engineering

**Weed population mapping used to control herbicide application rate in fields of conservation-tillage corn**

Establish technique to map perennial weeds in fields quickly and inexpensively. Store maps in tractor on board computer. Utilize direct injector sprayer to custom spray perennial weed patches in fields.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$8 000

**START/*DÉBUT***: *1989 09* **END/*FIN***: *1990 08*

## 0601-28

Brown, R
(519) 674-5456

Ridgetown College of Agricultural Technology

**Assessment of reduced amounts of herbicide applied more frequently to orchard crops**

To test lower rate of application of herbicides at varying frequencies to achieve reduced pesticide load and improved weed control.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$5 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 02*

## 0601-29

Burnison, B
(416) 336-4706

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of organic contaminants on microbial activities in natural waters**

To determine the effect of organic contaminants on bacterial productivity in various lakes. To determine the effect of organic contaminants on bacterial heterotrophy in various lakes. To further characterize the chemical composition of previously isolated DOC fractions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$450 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0601-30

Burpee, L
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of Dandelions in Turfgrass Swards**

To complete field observations and data analysis from 86/87; to complete an evaluation of virulence and agressiveness of fungal isolates; to develop an improved method of innoculating dandelions and evaluate same under field conditions.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesitcides Advisory Committee

$7 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 02*

## 0601-31

Burpee, L
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Developing an effective dissemination procedure for the snowmold control agent Typhula phacorrhiza**

To complete evaluation of storage technique for inoculum and to improve the application techniques.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-32

Busby, D
(506) 452-3086
Environment Canada; Canadian Wildlife Service

**Pesticide use in Nova Scotia and impact on birds**

To determine the impact of orchard spraying on birds in the Annapolis Valley.

Financing/*Financement:* Pesticides Program Fund (ECCP)

$23 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-33

Busby, D
(506) 452-3086
Environment Canada; Canadian Wildlife Service

**Fenitrothion and forest songbirds**

To assess the impact of new spraying techniques on forest songbirds.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-34

Buttle, J
(705) 748-1475
Geography Department; Trent University

**Hydrological pathways, herbicide transport: field monitoring & comparison of application techniques**

Examine total loading of metolachlor into receiving waters, comparing ppi treatment to pre-emerge treatment in corn at field site near Bailieboro. Use improved field methology to quantify pathways of movement. Work to augment research conducted in 1986.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$29 000

**START/*DÉBUT***: *1987 06* ***END/FIN***: *1988 05*

## 0601-35

Caux, P-Y
(514) 646-6043
Environnement Canada; Water Quality Branch

**Metiram and metribuzin run-off monitoring from levelled and bedded fields**

To measure metiram and metribuzin run-off from agricultural fields into the Nicolet River. Report by March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$32 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-36

Chau, A
(416) 336-4707
Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pyrethroid methods development**

To develop a sensitive method for the analysis of pyrethroids.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0601-37

Chau, Y
(416) 336-4707
Rivers Research Branch; National Water Research Institute; Environment Canada

**Biochemical indicators for studying metal pollution**

Use of metallothioneins (metal binding proteins) and 'Total Nucleotides' in biota to study metal stress and environmental health. Investigation of problem metals in the Athabasca River by analysis of sediment and fish samples.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0601-38

Clegg, B
unavailable
Ontario Ministry of Agriculture & Food

**Studies on the dissipation of residues of fusilade (fluazifop butyl) in mineral soils**

Sample soil 2 depths at 12 intervals over 1 year, treated at 2 rates. Address residue persistence on potatoes. Identify exposure levels to scouts. Study to be conducted at Cambridge Research Centre. Analyses to be conducted at OMAF Pesticide Laboratory in Guelph.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$14 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1989 10*

## 0601-39

Coderre, D
(514) 282-3367

Université du Québec à Montréal; Département des sciences biologiques

**Etude comparée des prédateurs aphidiphages spécialistes et généralistes.**

Comparer le potentiel de prédation de prédateurs des pucerons du maïs spécialistes (Coccinellidae) et généralistes (Carabidae, Aranea, Staphilinidae) à partir de leurs réponses numérique et fonctionnelle en monocultures et polycultures. Cette approche biologique du contrôle des insectes permettra de réduire l'utilisation des pesticides chimiques agricoles.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds institutionnel de recherche

$11 200

## 0601-40

Constable, M
(403) 468-8038

Environment Canada; Environmental Protection

**Effects of grasshopper spraying on roadside birds**

To determine the effect of grasshopper control programs on ground-nesting birds.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0601-41

Constable, M
(403) 468-8038

Environment Canada; Environmental Protection

**Bromoxynil in prairie wetlands**

To assess the levels and persistence of bromoxynil in water and sediment.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$5 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 03*

## 0601-42

Constable, M
(403) 468-8038

Environment Canada; Environmental Protection

**Toxicity and degradation of carbofuran**

To determine the effects of carbofuran on fish and aquatic insects.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$27 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0601-43

Constable, M
(403) 468-8038

Environment Canada; Conservation & Protection; Environmental Protection

**Monitoring for airborne pesticide residues in Alberta and Saskatchewan using a unique passive monitor**

To determine if a passive organic vapor monitor can be used to monitor pesticide vapors in air.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 04*

## 0601-44

Constable, M
(403) 468-8038

Environment Canada; Conservation and Protection; Environmental Protection

**Assessing the environmental hazards of ambient levels of lindane**

To determine if concentrations of lindane found in prairie rivers is toxic, on a chronic basis, to representative aquatic organisms.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000

**START/*DÉBUT***: *1987 06* **END/FIN**: *1988 06*

## 0601-45

Cossette, D
(418) 871-2412

Sage Ltée

**Recueil d'information sur les pesticides en usage au Québec**

Développer une base de données sur les principaux pesticides en usage au Québec comprenant: les caractéristiques physiques, chimiques, les modes d'utilisation, les lieux d'utilisation et les quantitées pulversées. Un rapport sera disponible en Mai 1988.

Financing/*Financement:* Environnement Canada, Conservation et Protection

Environnement Canada, Conservation et Protection

$45 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 05*

## 0601-46

Cullen, W
(604) 228-6225

University of British Columbia

**Synthesis of commercially important active insect growth regulators, insecticides and herbicides**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1986* **END/FIN**: *1988 03*

## 0601-47

Cumming, H
(807) 343-8280
Lakehead University; School of Forestry

**Use of 'round up' treated areas by moose**

To analyse the impact of the chemical spray glyphosate (trade name 'round up') in site preparation, and to determine what effects the chemical may have on the supply of browse plants for moose. A final report will be prepared for submission.

Financing/*Financement:* Ontario Ministry of Natural Resources

$47 500

**START/*DÉBUT***: *1986 04*

## 0601-48

Cunningham, J
(705) 949-9461
Sault College of Applied Arts & Technology

**Development of gypsy moth nuclear polyhedrosis virus as a microbial insecticide for use in Canada**

Determine NPV dosage which is an improvement on cost/benefit over B. t., i.e. lower dose, lower volume, single application. Compare FPMI formulation (Disparvirus) with Calliope formulation (Lymantrin). Assess feasibility of reducing application volume by 4. Continue epizootiological studies with naturally occurring and artifically disseminated NPV.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$13 800

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-49

Day, K
(416) 336-4659
Rivers Research Branch; National Water Research Institute

**The biological impact of agricultural runoff in streams: the effects of nutrient contaminant interactions on attached algae**

To develop the methodology to determine the effects of pesticides on attached algae found growing in aquatic ecosystems adjacent to agricultural land. To determine the effects of various levels of nutrients (N, P) on the toxicity of the herbicides, atrazine and metalochlor, to attached algal communities.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-50

Day, K
(416) 336-4659
Environment Canada; National Water Research Institute

**Biological impact of agricultural run-off from conventional vs. conservation tillage: Effects on attached algae in streams**

To compare the effects of run-off from land subjected to conservation vs. conventional tillage on periphyton in two sub-watersheds in the Kintore Creek water basin. Report by the end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$27 500

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-51

Day, K
(416) 336-4659
Rivers Research Branch; National Water Research Institute; Environment Canada

**Methods to determine the toxicity, fate and effects of contaminants in stream ecosystems**

To conduct research on the development of laboratory and in situ toxicity tests to determine the effects of ambient concentrations of non-point source contaminants (particularly pesticides) on stream ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

Ontario Ministry of Environment

$400 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1992 03*

## 0601-52

Day, K
(416) 336-4659
Environment Canada; Inland Waters Directorate; National Water Research Institute

**Run-off and stream invertebrates**

To assess the impact of agricultural run-off on stream invertebrates.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

## 0601-53

De Oliveira, D
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Effets des traitements insecticides appliqués au fraisier en fleurs sur les pollinisateurs et la production.**

1) Déterminer l'impact de divers insecticides utilisés contre la punaise terne et l'anthonome de la fleur du fraisier sur les pollinisateurs (insectes non-cibles) et le rendement de la culture. 2) Vérifier l'hypothèse selon laquelle les effets sublétaux des insecticides chez les abeilles les éloignent ou les rendent moins efficaces dans la pollinisation. 3) Développer un programme de protection du fraisier qui respecte les insectes pollinisateurs et tient compte des ravageurs-clés.

Financing/*Financement:* Fonds institutionnel de recherche

$4 500

## 0601-54

De Oliveira, D
Mauffette, Y
(514) 282-4118
Université du Québec à Montréal; Département des sciences biologiques

**Impact de la défoliation sur l'allocation des ressources et la biomasse chez la pomme de terre (solanum tuberosum L.)**

1) Estimer le seuil de tolérance de la pomme de terre à la défoliation. 2) Déterminer les patrons d'allocation des ressources et de la biomasse chez la pomme de terre soumise à différents niveaux de défoliation. 3) Construire un modèle de la croissance et de la productivité de la pomme de terre en vue de simuler les impacts de la défoliation sur l'allocation des ressources et la biomasse. 4) A moyen terme: diminution d'insecticides contre le doryphore ce qui se traduit par une protection accrue de l'environnement et une diminution du rapport coûts/production. 5) A long terme: mise en place d'un système de lutte intégrée contre les défoliateurs de la pomme de terre tout en assurant une production soutenue.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

$31 125

**START/*DÉBUT***: *1988* **END/*FIN***: *1989*

## 0601-55

DesGranges, J
(418) 649-6126
Environnement Canada; Canadian Wildlife Service

**Effects of diazinon, dimethoate and insecticidal soap sprays on birds in Christmas tree plantations**

To determine the impact of currently used insecticides on birds in Christmas tree plantations. Report by March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-56

DesGranges, J
(418) 648-3914
Environment Canada; Canadian Wildlife Service

**Diazinon impact on birds**

To determine the impact of diazinon on growth and survival of fledglings.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

## 0601-57

DesGranges, J
(418) 648-3914
Environment Canada; Canadian Wildlife Service

**Long term impact of pesticides on birds**

To assess the long term impact of pesticides on bird populations in forests.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$28 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

## 0601-58

Donald, D
(306) 780-6544
Environment Canada; Water Quality Branch

**Dry lakes study**

To assess the potential for pesticide residues to affect aquatic invertebrates in critical shorebird and waterfowl staging habitats in Saskatchewan. Report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 600

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-59

Dosman, J
(306) 966-8286
Centre for Agricultural Medicine; University of Saskatchewan

**Pesticides, soft tissue sarcoma, lymphoma and multiple myeloma; in three regions of Canada**

A pilot study proposal using case-control studies in three regions of Canada.

Financing/*Financement:* Health and Welfare Canada

$27 676

## 0601-60

Ernst, W
(902) 426-9064
Environment Canada; Environmental Protection

**Incidence and magnitude of contamination of small water bodies by fenitrothion during forestry spraying**

To determine the incidence and magnitude of fenitrothion contamination of bog ponds under operational conditions. Report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$21 500

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-61

Ernst, W
(902) 426-9064
Environment Canada; Environmental Protection

**Determination of pesticide residues in berries and soil sprayed with pesticides on transmission line right-of-ways**

To determine the magnitude and duration of pesticide contamination of berries and soil on rights of way sprayed with herbicides, report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 500

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-62

Ernst, W
(902) 426-9064

Environment Canada; Environmental Protection

**Determination of extent and magnitude of pesticide contamination of shellfish**

To analyse blue mussels from various locations near agricultural areas for pesticides, report by March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 500

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-63

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Plants as biomonitors**

To assess the use of sensitive plants to determine drift.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-64

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Drift of pyrethroids to aquatic systems.**

To determine if regulatory set-backs from water are effective.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0601-65

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Chlorothalonil and biological impact**

To assess the biological impact of chlorothalonil use in the Atlantic Region.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-66

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Pesticide effluents from pulp and paper industry**

To determine the impact of pulp and paper industry pesticides on aquatic systems.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$14 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0601-67

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Pesticide use inventory**

To determine the use pattern of pesticides in the Atlantic Region with specific reference to those chemicals likely to contaminate groundwater.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0601-68

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Assessment of organotin contamination in the Atlantic Region**

To provide an assessment of the presence of organotins in the Atlantic Region, and impact on aquatic organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-69

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Overswathing and the forest environment**

To assess the impact of overswathing on forest ecosystems.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$31 500

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-70

Ernst, W
(902) 426-6141

Environment Canada; Environmental Protection

**Buffer zones**

To use models to predict spray buffer zones.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-71

Falter, H
(705) 675-1151

Laurentian University; Chemistry

**Protease activation of bacillus thuringiensis crystal toxins**

Assess the role of activation of Bt toxins to the toxicity towards target insect larvae of commercial interest. Report is not available.

Financing/*Financement:* Canadian Industries Ltd.

Ontario Ministry of Colleges and Universities

$101 026

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1989 09*

## 0601-72

Faulkner, P
(613) 545-2450

Department of Microbiology and Immunology; Queen's University

**Development of a monoclonal antibody probe for eggs and larvae of the parasite Pholetesor ornigis**

Develop a monoclonal antibody probe to detect eggs and larvae parasite of spotted tentiform leafminer (Phyllonorycter blancardella). Once specific probes for this parasite are identified, they can be used to develop a kit for the filed or laboratory detection of the parasite. Where the parasite is present, use of chemical sprays is not needed.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$8 500

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1988 04*

## 0601-73

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Persistence of pesticide residues**

Assess land application as a method for disposal of dilute mixed pesticide residue waste. The project determined the persistence of active ingredients under field conditions and effects on nitrate-nitrogen concentrations. Report available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$12 500

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1987 06*

## 0601-74

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Reverse osmosis treatment of pesticide residues**

To evaluate present reverse osmosis technology as a method to concentrate pesticide residues. Report available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$7 800

**START/*DÉBUT*:** *1986 10* **END/FIN:** *1987 04*

## 0601-75

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Pesticide container disposal site assessment project**

The ultimate objective of the project was to ensure the continuing integrity of the pesticide container collection sites across the province. The specific objectives were to determine the extent of contamination and examine the physical characteristics and operational practices of each site. Summary report is available.

Financing/*Financement:* Saskatchewan Environment and Public Safety

$45 000

**START/*DÉBUT*:** *1986 01* **END/FIN:** *1987 01*

## 0601-76

Ferris, S
(306) 787-6193

Saskatchewan Environment and Public Safety

**Pesticide residue treatment and disposal - evaluation of a biodegradation, photodegradation and evaporation pesticide treatment system**

Examine the effectiveness and feasibility of a lined soil-bed system for the treatment and disposal of pesticide residues. An ongoing cooperative study.

Financing/*Financement:* Environment Canada, Conservation & Protection

Saskatchewan Environment and Public Safety

Agriculture Canada

$27 000

**START/*DÉBUT*:** *1987 05*

## 0601-77

Fitz-James, P
not available

Department of Microbiology and Biochemistry; University of Western Ontario

**Field test of new corn rootworm pathogen**

To determine minimal concentration of cultures of Bacillus laterosporus to achieve rootworm control.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$6 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-78

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Deltamethrin and duck populations**

To assess the potential impact of the synthetic pyrethroids on duck populations.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$19 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-79

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Grasshopper control and loggerhead shrikes**

To assess the impact of grasshopper control programs on shrikes.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$9 200

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-80

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Carbofuran and prairie songbirds**

To assess the impact of grasshopper control programs on songbirds.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 300

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-81

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Carbofuran and mallard ducklings**

To assess the toxicity of carbofuran to mallard ducklings.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-82

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Hazards of rodenticides to birds**

To assess the potential secondary poisoning hazard of rodenticides to hawks.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$4 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-83

Forsyth, D
(306) 975-4087

Environment Canada; Canadian Wildlife Service

**Deltamethrin in wetlands**

To assess the contamination of sloughs after aerial application of deltamethrin. Report due at year end.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$16 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-84

Fox, G
(819) 997-6076

Environment Canada; Canadian Wildlife Service

**Grasshopper control and burrowing owls**

To assess the impact of insecticide sprays on burrowing owls.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-85

Gillespie, T
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Measurement and estimation of crop microclimates for pest management**

To allow meteorological information to be used for optimum scheduling of pest control measures. Since these measures often involve the use of pesticides, maximizing their effectiveness with minimum wage through wise scheduling can enhance environmental quality.

Financing/*Financement:* Ontario Ministry of Agriculture and Food

$27 000

**START/*DÉBUT*:** *1987 04*

## 0601-86

Godon, D
(418) 687-1090

Centre Hospitalier de l'Université Laval; Dépt. santé communautaire

**Approche géographique à la problématique des pesticides agricoles et de la santé au Québec.**

Déterminer et décrire les associations entre les indicateurs de problèmes de santé (décès par cancer et autres maladies, etc) et les indicateurs environnementaux, dont principalement l'utilisation des pesticides agricoles en milieu rural dans les bassins hydrographiques du Québec. Il vise à identifier les zones et les populations à risques et à formuler des hypothèses étiologiques spécifiques.

Financing/*Financement:* Québec, ministère de l'Environnement

Québec, ministère de la Santé et des Services Sociaux

Canada, ministère de l'Environnnment

$82 500

**START/*DÉBUT***: *1987 01* **END/FIN**: *1989 12*

## 0601-87

Greenhalgh, R
(613) 995-3700

University of Ottawa; Biology

**Pesticide Research**

none given

Financing/*Financement:* Xenos Laboratories Inc.

$106 000

**START/*DÉBUT***: *1989 05* **END/FIN**: *1991 04*

## 0601-88

Grove, G
(306) 975-5741

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater technology transfer**

To undertake field and/or office investigations with emphasis on specific problems related to the transfer of groundwater technology developed by research studies in the Division. To provide advice and assess the technical soundness of the groundwater component of external investigations.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/FIN**: *ongoing*

## 0601-89

Grove, G
(306) 975-5741

Environment Canada; Inland Waters Directorate; National Hydrology Research Institute

**Pesticides and groundwater in Saskatchewan**

To assess the presence in groundwater of frequently used pesticides in the prairies.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$31 500

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 03*

## 0601-90

Grove, G
(306) 975-5741

Environment Canada; Inland Waters Directorate; National Hydrology Research Institute

**Pesticide usage in Manitoba**

To assess the amount of pesticide used in agriculture in Manitoba. Final report to be produced by April, 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

## 0601-91

Guidotti, T
Kelly, S
(403) 492-6291

University of Alberta; Faculty of Medicine; Occupational Health Program

**Pesticide-related research**

1. Preparation of guide to management of pesticide toxicity. 2. Dissemination of fact sheets and related materials on pesticide toxicity. 3. Health effects of exposure to herbicides - review and risk assessment (submitted for publication). 4. Feasibility study for investigation of pesticide container recycling and its attendant exposure risks.

Financing/*Financement:* Alberta Environment

## 0601-92

Gummer, W
(306) 780-5322

Environment Canada; Inland Waters Directorate

**Dichlofop methyl on wetland communities**

To assess the impact of dichlofop methyl on non-target aquatic organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

## 0601-93

Gummer, W
(306) 780-5322

Environment Canada; Inland Waters Directorate

**Grasshopper spray survey**

To determine the level of pesticides in surface water as a result of grasshopper control programs.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0601-94

Hall, J
(519) 824-4120
University of Guelph; Department of Environmental Biology

**Quantification of Herbicides in Soil, Water and Plants Using Enzyme-Linked Immunosorbent Assay**

The development of an enzyme linked immunosorbent assay (ELISA) for the deteciton of trace levels of herbicides in soil, water and plants.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$66 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1989 06*

## 0601-95

Hall, R
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Improved efficacy of chemical control of white mold in snap bean**

To test the utility of a predictive model for fungal infection in snap beans and to test the efficacy of spray applications as recommended by the model.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-96

Harmsen, R
(613) 547-3072
Biology Department; Queen's University

**The development of an IPM module for the control of phytophagous mites in apple orchards**

To test the reliability of the model in the presence of insecticides.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$5 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-97

Hennigar, J
(902) 426-3266
Environment Canada; Inland Waters Directorate

**Agricultural pesticide run-off from tile drained fields**

To assess the movement of pesticides through tile drainage into water.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-98

Hennigar, T
(902) 426-3267
Environment Canada; Inland Waters Directorate

**Aquatic effects of atrazine and/or MCPA from agricultural applications**

To determine the impact of atrazine and MCPA from a field with tile drains and the impact of the effluent on stream fauna and flora. Report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-99

Hennigar, T
(902) 426-3267
Environment Canada; Inland Waters Directorate

**Aquifer vulnerability study: Sheffield Farm Research Station, Kings County Nova Scotia**

To analyse for groundwater contamination in Nova Scotia, report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-100

Hofstra, G
Fletcher, R
(519) 824-4120
University of Guelph; Dept. of Environmental Biology

**Reducing the rates of glyphosate to control broadleafed trees in conifer plantations**

Determine the effect of low rates of glyphosate on visual injury and growth of various broadleaf trees. Determine the effect of low levels of glyphosate on white spruce and jack pine. Establish a strategy for conifer release. Continue field measurements sprayed 1987 and 1988.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$15 300

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-101

Houseman, J
(613) 564-3949
University of Ottawa; Biology

**Interaction between plant protease inhibitors and secondary metabolites on insect physiology**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$45 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0601-102

Jackson, R
(416) 336-4587

Rivers Research Branch; National Water Research Institute; Environment Canada

**Pesticide migration and fate in groundwater**

To investigate the transport and transformation of pesticide residues in groundwater.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$250 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1991 03*

## 0601-103

Jackson, R
(416) 336-4587

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Groundwater in Prince Edward Island**

To determine pesticide migration and fate in groundwater in P.E.I.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$22 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1987 03*

## 0601-104

Jaques, R
(519) 738-2251

Agriculture Canada; Research Station

**Effectiveness of the granulosis virus in management of the Codling Moth in apple orchards and its environmental impact**

This study is to provide data on the effect of the granulosis virus on non-target species in apple orchard; sunlight greatly affects the stability of the virus; further studies are required to identify material to enhance its efficacy potential. Conduct efficacy trials in the laboratory. Conduct non-target and impact in small plots and commercial orchards. Evaluate materials to protect virus against inactivation by sunlight. Assemble data to support registration.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$8 300

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0601-105

Juzwik, J
Saunders, J
unavailable

Pest Management Section; Ministry of Natural Resources

**Soil solarization for control of root rots in Ontario forest nurseries**

The objectives of the proposed trials are to determine the effect of soil solarization on: Populations of Cylindrocladium floridanum in nursery soil the season following treatment and on disease incidence in white spruce transplanted into the trial area. And on populations of Fusarium, Cylindrocarpon, and Rhizoctonia in nursery soil before and after treatment. (Note: Disease incidence would be monitored during the subsequent year after seeding with white pine).

Financing/*Financement:* Ontario Pesticides Advisory Committee

$8 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0601-106

Kalff, J
Leggett, W
(514) 398-6467

Université McGill; Département de biologie

**Modelling limnological responses to the loading of nutrients and contaminants**

The limnological parameters that are studied include pelagical phyto and zooplankton biomass and size structure, the biomass of submerged macrophytes, abundance, sediment and planktonic bacteria, biomass and size-structure of zoobenthos, growth, biomass, size-structure and species composition of littoral fishes. These parameters are being studied in relation to nutrients, and in addition, are investigating the accumulation of a wide variety of heavy metal and organic contaminants in these limnological communities.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Donner

$385 050

## 0601-107

Kaushik, N
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Impact of algal fibrils on fate and bioavailability of a pyrethroid insecticide to non-target aquatic organisms**

To investigate the role of algal fibrils in bioavailability of insecticides to non-target organisms in water. Objectives of the proposal: To investigate interactions between dissolved organic matter (DOM) and insecticides (methoxychlor and fenvalerate) in terms of their bioavailability to Daphnia magna. To test bioavailability of selected pesticides (fenvalerate, methoxychlor, atrazine metolachlor and chlorosulfuron) in the presence of different concentrations of fibrils of known algal origin.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$14 500

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0601-108

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effects of Microencapsulated/EC permethrin and a new generation synthetic pyrethroid SAN 811-I**

To assess the effect of mirco-encapsulation on the toxicity of permethrin to aquatic invertebrates; and to determine EC50 and EC90 for new synthetic pyrethroid SAN 811-I.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$13 500

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-109

Kevan, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Microbiol biocontrol for suppressing milkweed feed production using yeasts to curtail fertilization**

To follow up on previous research to test the efficacy of yeasts in preventing fertilizaiton.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$7 600

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-110

Khalil, M
(418) 724-1759

Université du Québec à Rimouski; Département d'océanographie

**Contamination des harengs du Saint-Laurent par les organochlorés.**

Etude du degré de contamination de différentes populations de harengs dans différentes frayères dans l'estuaire et le golfe du Saint-Laurent.

Financing/*Financement:* Fonds institutionnel de recherche

Fondation UQAR

$15 000

## 0601-111

Kharbanda, P
(403) 632-6761

Alberta Environmental Centre

**Disease management in oilseed crops**

To investigate upon occurence, spread, yield losses caused by and control of economically important diseases of oilseed crops in northeastern Alberta employing ecologically compatible and environmentally safe techiques with emphasis on integrated disease management.

Financing/*Financement:* Alberta Environmental Centre

## 0601-112

Kharbanda, P
(403) 632-6761

Alberta Environmental Centre

**Disease management in cereal crops**

To investigate upon occurrence, spread, yield losses caused by, and control of economically important diseases of cereals in northeastern Alberta employing ecologically compatible and environmentally safe techniques with an emphasis on integrated disease management. Results published in scientific journals and the Pesticide Research Report of Agriculture Canada.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT*:** *1981 01*

## 0601-113

Kisley, K
Ernst, W
(902) 426-6141

Environment Canada

**Investigation of the use, environmental occurrence, and effects of tri-n-butyltin compounds**

The objectives of this project are threefold: 1) To determine the use pattern of TBT in the Atlantic Region. 2) To determine the environmental occurrence and possible bioaccumulation of TBT residue. 3) To conduct a series of bioassays to determine effects of chronic exposures on selected marine organisms.

Financing/*Financement:* Pesticides Program Funding

$30 000

**START/*DÉBUT*:** *1987 09* **END/FIN:** *1988 09*

## 0601-114

Kingsbury, P
(705) 949-9461

Sault College of Applied Arts and Technology

**Implementation protocol for fruit-set and seed-set of the forest wildflower Polygonatum pubescens**

Polygonatum pubescens (hairy Solomon's Seal) has been identified as a suitable species for assessing impact of spraying on pollination and fruit-set. Its value as a monitor will be further tested.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$23 100

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-115

Kluckner, P
(604) 666-6767

Environment Canada; Environmental Protection

**Levels of TCMTB in waters and sublethal effects on juvenile salmon**

To monitor TCMTB concentration in water, sediment and fish, report by March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$36 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-116

Krishnappan, B
(416) 336-4766

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fine sediment dynamics including contaminants and biota interactions and modelling of river flows**

Carry out experimental investigations into the transport mechanisms of fine sediments in river systems using the rotating flume and to develop modelling capabilities in the area of river flows and transport of fine sediments and the associated contaminants.

Financing/*Financement*: Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1995 03*

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## 0601-117

Kumar, Y
(403) 632-6761

Alberta Environmental Centre

**Pesticide analysis and methods development**

Interdisciplinary research projects are undertaken to determine, evaluate and assess environmental impact of pesticides on the ecosystem. Emphasis is placed on method development to suit the individual research projects undertaken by Alberta Environment, Alberta Agriculture and other departments. The results are published in reports and scientific journals.

Financing/*Financement*: Alberta Environment

Alberta Agriculture

Alberta Forestry Lands & Wildlife

$180 000

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## 0601-118

Kushner, D
Williams, D
(416) 978-5759

University of Toronto

**Control of mosquito larvae by bacterial toxins: search for an algal vector**

Overall objectives: To identify species of algae which should serve as practical vectors of bacterial toxins to mosquito larvae. To carry out an initial field survey of occurrence of algae in mosquito habitats. To set up mosquito feeding stations in 3 or more sites each at 1-2 locations in Ontario to collect eggs from same for subsequent laboratory study of larval feeding behaviour. To study population changes in naturally-occurring and introduced algal species and to determine accompanying changes in mosquito larval populations. To study growth and survival under field conditions of introduced strains of cyanobacteria susceptible to insertion of genetic markers, especially those that determine bacterial toxins, and their ingestion by mosquito larvae.

Financing/*Financement*: Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

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## 0601-119

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Levels of selected herbicides in right-of-way water courses in the lower mainland of B.C.**

To identify residue levels of selected herbicides in water and sediments and to assess their toxicity to juvenile salmonids. Report by March, 1990.

Financing/*Financement*: Pesticides Program Funding (ECCP)

$10 400

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

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## 0601-120

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Survey of chlorophenols and dioxins in the Fraser River and Vancouver Island**

To provide an assessment of the impact of chlorophenols on organisms in British Columbia

Financing/*Financement*: Pesticides Program Funding (ECCP)

$36 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

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## 0601-121

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Groundwater contamination in the Pacific Region**

To identify the extent of groundwater contamination in the Lower Fraser Valley aquifers.

Financing/*Financement*: Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

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## 0601-122

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Pesticide usage in the Lower Fraser Valley, British Columbia**

To quantify all pesticides sold in the Lower Fraser Valley.

Financing/*Financement*: Pesticides Program Funding (ECCP)

$12 500

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

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## 0601-123

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Chlorophenol releases into aquatic systems**

To determine the effectiveness of the Code of Good Practice in controlling run-off from the wood protection industry.

Financing/*Financement*: Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 03*

## 0601-124

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Concentration of chlorophenols in starry flounders**

To determine the concentration of chlorophenols in starry flounders in British Columbia.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$28 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0601-125

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Pesticide inventory in the Yukon**

To determine the extent of pesticide use in the Yukon.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$9 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

## 0601-126

Kussat, R
(604) 666-3601

Environment Canada; Environmental Protection

**Assessment of organotin contamination in the British Columbia environment**

To provide an assessment of the levels of organotins in sediment organisms.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 03*

## 0601-127

Kwong, J
(306) 975-4719

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Freeze-thaw, soils and groundwater**

To investigate the effects of multiple freeze-thaw cycles on the chemical properties of soils and their implications for groundwater quality.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1988* **END/FIN**: *ongoing*

## 0601-128

Laing, J
(519) 824-4120

Department of Environment Biology; University of Guelph

**Introduction of Holcothorax testaceipes for the biological control of spotted tentiform leafminer**

To continue experimental releases of the parasite and evaluate its effectiveness and tolerance to pesticides.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$7 850

**START/*DÉBUT***: *1987 03* **END/FIN**: *1988 02*

## 0601-129

Langford, C
(514) 848-4802

Université Concordia; Département de chimie

**Spéciation des métaux lourds et des pesticides dans les eaux naturelles et les sols.**

Modélisation des interactions des pesticides avec les ions métalliques et les substances organiques des sols (substances humiques) ou les hydroxydes de fer.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0601-130

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pesticides on algae and zooplankton**

To assess the impact of pesticides on algae and zooplankton.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$8 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

## 0601-131

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Effects of pesticides on algae**

To develop a mechanism to assess the presence of low pesticide levels in water.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 03*

## 0601-132

Lean, D
(416) 336-4783

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Effects of pyrethroids on zooplankton**

To determine the sublethal effects of pyrethroids on aquatic systems.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0601-133

Lee, B
(416) 336-4755

Research and Applications Branch; National Water Research Institute; Environment Canada

**Analysis of phthalic acid and esters (PAE's) in sediment extracts**

To develop an HPLC-ECD method for the analysis of PAE's in sediment extracts. The method should perform the clean-up, fractionation and quantitation of the sediment PAE's simultaneously. The method should be simpler, less time consuming and reduce background contamination problems.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 04*

## 0601-134

Liebscher, H
(604) 666-0807

Environment Canada; Inland Waters Directorate

**Survey of groundwater and surface water pesticide contamination in high risk areas in Similkameen**

To identify the extent of groundwater and surface water contamination in selected Similkameen aquifers and surface waters. Report by March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-135

Lloyd, K
(819) 997-6131

Environment Canada; Canadian Wildlife Service; National Wildlife Research Centre

**Mapping of bird habitat overlap with agricultural land**

To assess the extent to which habitat of bird species overlap with agricultural land.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-136

Mackey, S
(519) 326-5701

Agriculture Research Department; H.J. Heinz Company of Canada

**Weather timed fungicide on tomatoes for improved disease control**

To develop cost-efficient spray program for the control of tomato diseases.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$11 300

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-137

Maguire, R
(416) 336-4776

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fate of pesticides and industrial chemicals in the Yamaska River, Quebec**

To finish analyses of water, sediment and biota from the Yamaska River for dyes, chlorinated chemicals and pesticides. To start work on identification of PAHs and related chemicals in effluents from tar sands operations on the Athabasca River, Alberta. Cross-reference with 83013 (J. Metcalfe) and 83015 (K. Day).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$500 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1990 03*

## 0601-138

Maguire, R
(416) 336-4776

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pesticides in fish from Yamaska River, Quebec**

To develop a sensitive technique for measuring pesticides in fish.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$23 100

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-139

McLeod, D
(519) 679-4452

University of Western Ontario

**Evaluation of alternative methods of pest control for the home garden**

In 1987, 1988, research was conducted to assess the effectiveness of an insect predator Aleochara bilineata for control of root maggot in home gardens, in onion sets, bunching onions, cabbages and radishes. Cabbage maggot, but not onion maggot was controlled, but at a cost of $7.50/wk/garden. In 1989 work will proceed on the use of light weight fabric floating row covers, the effect of mass trapping crucifer pests and the use of Aleochara bilineata.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 700

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-140

McLeod, D
(519) 679-4452

University of Western Ontario

**Assessment of the potential of Aleochara bilineata for control of root maggots in the home garden**

To assess the effectiveness of an insect predator for control of root maggot in home gardens; and estimate the relative abundance of parasites and predators in the home garden environment.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$14 700

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-141

McNaughton, D
(306) 975-5735

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater pesticides studies in western Canada**

To determine the extent of pesticide contamination of groundwater in western Canada, through the investigation and documentation of the presence of pesticides in groundwater at selected study sites. To estimate the potential for groundwater contamination from pesticides by relating pesticide usage and chemical properties to distribution and properties of groundwater systems.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* ***END/FIN***: *ongoing*

## 0601-142

Merriman, J
(416) 336-4962

Environment Canada; Water Quality Branch

**Nematocides in surface and groundwater of Big Creek watershed**

To determine the extent of groundwater contamination on tobacco farms adjacent to Big Creek as well as at sites in Big Creek. Report by end of March, 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-143

Metcalf, J
(416) 336-4685

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Organisms as indicator of ecosystem health**

To develop a sensitive technique for measuring presence of pesticides in the environment.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 200

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-144

Metcalfe, J
(416) 336-4685

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biomonitoring techniques for contaminants in rivers**

Complete research on the bioaccumulation and ecological/physiological effects of pesticides in aquatic organisms from the Yamaska River, Quebec. Continue research on freshwater mussels as biomonitors in the upper St. Lawrence River. Initiate research on the impact of tar sands operations on fish in the Athabasca River, Alberta.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1991 03*

## 0601-145

Mickle, R
(416) 739-4851

Environment Canada; Atmospheric Environment Service

**Examination of the influence of application parameters on deposit and drift of forestry herbicides**

To assess the influence of application parameters on deposit and drift of forestry herbicides. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$39 500

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-146

Mickle, R
(416) 739-4851

Environment Canada; Atmospheric Environment Service

**Examination of the effects of aircraft wake on spray drift and deposit**

To determine drift and deposition of port and starboard spray emissions from TBM vs. AGT at different heights. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$26 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-147

Mickle, R
(416) 739-4851

Environment Canada; Atmospheric Environment Service

**Helicopter operations on herbicide drift**

To assess the influence of airspeed and altitude on drift.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$40 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-148

Mickle, R
(416) 739-4851
Environment Canada; Atmospheric Environment Service
**Aerial drift modelling**
To evaluate a drift model to be used in assessing potential off-target deposition of pesticides.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$57 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0601-149

Mickle, R
(416) 739-4851
Environment Canada; Atmospheric Environment Service
**Pesticides in the atmosphere**
To provide an assessment of the concentrations of some pesticides in the prairie atmosphere.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$32 850
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-150

Mickle, R
(416) 739-4851
Environment Canada; Atmospheric Environment Service
**Optimization of spray operations**
To develop an optimum combination of strategies to reduce aerial spray drift.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$27 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-151

Mickle, R
Lo, A
(416) 739-4851
Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch
**Pesticide off target drift**
To evaluate spray drift model and develop instrument for spray cloud mapping.
Financing/*Financement:* Industry
$20 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 04*

## 0601-152

Mineau, P
(819) 997-6073
Environment Canada; Canadian Wildlife Service
**Energetic and reproductive consequences of sublethal dosing with anti-cholinesterase inhibition in birds**
To use the tree swallow as a model to look at the consequences of sublethal exposure to anti-cholinesterases. Report by end of March 1990.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$28 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-153

Mineau, P
(819) 997-3045
Environment Canada; Canadian Wildlife Service
**Gopher poisoning and burrowing owls**
To assess the hazard of gopher poisoning with strychnine on the burrowing owl.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$10 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-154

Mineau, P
(819) 997-3045
Environment Canada; Canadian Wildlife Service
**Agricultural bird census**
To assess the feasibility of establishing an agricultural bird census.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$31 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-155

Mineau, P
(819) 997-3045
Environment Canada; Canadian Wildlife Service
**Fenthion and falcons**
To assess the secondary poisoning hazard of fenthion to peregrine falcons.
Financing/*Financement:* Pesticides Program Funding (ECCP)
$20 200
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-156

Mineau, P
(819) 997-3045
Environment Canada; Canadian Wildlife Service
**Potential exposure to pesticide granules**

To assess the efficacy of insecticide granules incorporation.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1988 04* **END/*FIN***: *1989 03*

## 0601-157

Mineau, P
(819) 997-3045

Environment Canada; Canadian Wildlife Service

**Sublethal effects of pesticides on birds**

To develop biochemical indicators for monitoring sublethal effects of pesticides on birds.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$55 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 03*

## 0601-158

Mineau, P
(819) 997-3045

Environment Canada; Canadian Wildlife Service

**Burrowing owls**

To determine the effects of insecticides on the burrowing owl.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$27 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 03*

## 0601-159

Morrison, A
(519) 824-4120

Department of Food Services; University of Guelph

**Effects of processing on peremethrin residues on Ontario vegetables**

To determine the influence of processing on permethrin residues in green wax beans and cabbage.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$8 200

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 02*

## 0601-160

Murphy, T
(416) 336-4602

Lakes Research Branch; National Water Research Institute; Environment Canada

**Small lake restoration**

Evaluate oxygen injection, lime treatment, and sediment dredging as lake restoration tools.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$300 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0601-161

Nealis, V
(705) 949-9461

Great Lakes Forestry Centre

**Improving the biological control potential for gypsy moth in Ontario through the introduction of new species and strains of parasitoids based on their susceptibility to hyperparasitism**

To assess the impact of hyperparasitism on field populations of the gypsy moth parasitoid, Cotesia melanoscela. To maintain colonies of the biological control candidates and the principal hyperparasitoids for experimental trials. To examine the relative susceptivility of new biological control candidates to hyperparasitism in order to assess their likely effectiveness for biological control in Ontario.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$13 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0601-162

Nealis, V
(705) 949-9461

Sault College of Applied Arts and Technology

**The role of parasitoids in the collapse of jack pine budworm populations**

Carry out a detailed analysis of existing data to examine the relationship between parasitism and jack pine budworm cycles, leading to improvements in the ability to forecast expected defoliation from larval sampling.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1988 04*

## 0601-163

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Pesticide transport by spring run-off**

To determine quality and quantity of surface run-off into 20 farm dugouts on 4 different soil types in Sask. To determine the potential movement of herbicides under zero till in agronomic practices in Manitoba.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/*FIN***: *ongoing*

## 0601-164

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Herbicide and nutrient loss using low-pressure irrigation systems**

Under conditions of low-pressure irrigation, determine the mobility and degradation of herbicides, pesticides and nutrients; the quantity and quality of leachate; and the degradation and leaching characteristics of herbicides, pesticides and nutrients.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* **END/FIN**: *ongoing*

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## 0601-165

Oloffs, P
(604) 291-4292

Simon Fraser University

**Behaviour of selected pesticides and pesticide formulations under field and lab conditions**

Behaviour includes effects, persistence, translocation and transformation.

Financing/*Financement:* National Science & Engineering Research Council

$15 000

**START/*DÉBUT***: *1985 04* **END/FIN**: *1986 03*

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## 0601-166

Onuska, F
(416) 336-4635

Research and Applications Branch; National Water Research Institute; Environment Canada

**Supercritical fluid extraction and chromatography**

To design, construct, interface, automate and evaluate SFE-GC system. To investigate the application of Ion Mobility Detector for SFE-GC system. To investigate the performance of MS in tandem with SFE.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* **END/FIN**: *1990 03*

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## 0601-167

Peakall, D
(819) 997-2780

Environment Canada; Canadian Wildlife Service

**Monitoring pesticides effects on birds**

To assess a sensitive technique for monitoring exposure of birds to pesticides.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1987 04* **END/FIN**: *1988 03*

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## 0601-168

Philbert, F
(416) 336-4663

Environment Canada; Inland Waters Directorate; Water Quality Branch, Ontario Region

**Pesticide distribution in the lower Ottawa River**

To determine the distribution of pesticides in the lower Ottawa River.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$15 000

**START/*DÉBUT***: *1986 04* **END/FIN**: *1987 03*

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## 0601-169

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Response of insects to plant xenobiotics**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$174 057

**START/*DÉBUT***: *1983 04* **END/FIN**: *1992 03*

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## 0601-170

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Development of phototoxins as control agents for blood feeding insects**

none given

Financing/*Financement:* Department of National Defence Canada

$192 753

**START/*DÉBUT***: *1984 12* **END/FIN**: *1987 08*

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## 0601-171

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Botanical pesticides**

none given

Financing/*Financement:* International Development Research Centre

$75 200

**START/*DÉBUT***: *1988 02* **END/FIN**: *1991 02*

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## 0601-172

Pierce, W
(709) 637-4375

Environment Canada; Conservation & Protection

**Determination of frequency of over swathing during aerial pesticide applications in Nfld. forests**

To establish the frequency at which greater than intended deposit of fenitrothion occurs during operational aerial application against the hemlock looper outbreak in Newfoundland forests. The study will assist in assessment of the risk the spray represents to forest birds.

Financing/*Financement:* Pesticides Program Funding

Environment Canada, Conservation & Protection

$32 500
**START/*DÉBUT***: *1987 06* ***END/FIN***: *1988 06*

## 0601-173

Protz, R
(519) 824-4120
Department of Land Resource Science; University of Guelph

**Development of an index of soil quality**

To develop an 'index of soil quality' based on differences between virgin and cultivated soil properties.

Financing/*Financement:* Ontario Ministry of Agriculture and Food
Natural Sciences and Engineering Research Council
**START/*DÉBUT***: *1987 02*

## 0601-174

Ribo, J
(306) 975-5789
Environment Canada; Inland Waters Directorate; National Hydrology Research Institute

**Toxic effects of pesticides in the aquatic environment**

To develop a database of comparative toxicity of pesticides using the Microtox assay. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)
$24 500
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-175

Ripley, B
(519) 823-8800
Ontario Ministry of Agriculture & Food

**Comparative behaviour of pesticides with respect to worker safety. Re-entry intervals. Dislodgeable residues; pesticide exposure to integrated pest management (IPM) scouts from treated fields**

To identify level of residues on foliage from 9 pesticides at typical re-entry trials: Determine dislodgeable residues for 5 insecticides and 4 fungicides applied to apple leaves will be analyzed over 7 timings (day 0-3). Foliage samples will be examined for total and dislodgeable residues. Analyse patches from IPM scouts entering fields (muck vegetables and apple orchards) at various timings for a screen of pesticide residues (Numerous analytical procedures) ; look at cholinesterase levels of IPM scouts working in the Bradford Marsh area.

Financing/*Financement:* Ontario Pesticides Advisory Committee
$14 300
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-176

Ritter, L
(613) 957-1852
Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2704)**

To evaluate the toxicity data on new pest control products (including inerts and field residues) and to re-evaluate registered products.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$2 011 458
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0601-177

Ritter, L
(613) 957-1852
Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2705)**

To develop models to estimate worker and by-stander exposure to pesticides and their field residues. To test the suitability of the models and establish relevant safety factors.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$1 005 630
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0601-178

Ritter, L
(613) 957-1852
Health and Welfare Canada; Environmental Health Directorate

**Pesticides (major goal: 2706)**

To develop and assist in the implementation of a Canadian core program for education and training of pesticide applications.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$41 565
**START/*DÉBUT***: *1986 04* ***END/FIN***: *ongoing*

## 0601-179

Roberts, W
(519) 823-5700
Ontario Ministry of Agriculture and Food; Pest Management

**Integrated Pest Management on Field Corn: A Feasibility Study**

1. To define the scope of the problem through a survey of the pest complex (insects and weeds) in field corn; 2. To evaluate available monitoring techinques with emphasis on combining various methods in a total program suitable for Integrated Pest Management; 3. To demonstrate the capability of making cost-efffective Integrated Pest Management decisions for field corn.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$378 100
**START/*DÉBUT***: *1984 05*

## 0601-180

Ruel, J
(418) 643-7994
Ministère l'Energie et Ressources; Direction recherche et développement

**Impact de la compétition sur le sapin**

Quantifier l'impact de la compétition afin d'affiner les prescriptions relatives au dégagement soit par voie mécanique ou chimique. Ce projet se situe dans le cadre d'un programme visant à réduire l'utilisation des pesticides.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$11 000

**START/*DÉBUT***: *1988* **END/FIN**: *1995*

## 0601-181

Sanders, C
(705) 949-9461
Sault College of Applied Arts and Technology

**Development of sex phermone traps for monitoring jackpine budworm**

To determine the optimum blend and concentration of phermone components, the appropriate phermone dispenser, and suitable trap design and deployment of traps.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$14 100

**START/*DÉBUT***: *1987 03* **END/FIN**: *1988 02*

## 0601-182

Schaafsma, A
(519) 674-5456
Insect & Disease Control; Ridgetown College of Agricultural Technology

**New technology for insecticide placement to control soil insects in row crops**

Develop a modified approach to corn rootworm control to reduce insecticide amounts by 75% by better timing and placement. Continue from recent Ohio research findings. Over 3 years: Evaluate rate and placement of insecticides applied manually by point injection. Design, develop, and modify point injection applicators. Test prototype injection equipment for commercial utility.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$6 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

## 0601-183

Sears, M
(519) 824-4120
University of Guelph; Dept. of Environmental Biology

**Impact of natural enemies on populations of Colorado potato beetles in potatoes**

To record the effect of all natural enemies on populations of CPB in small field plots and create a life table of the mortality factors. To develop rearing procedures for C. maculata, P. maculiventris, and P. bioculatus. To determine the effect of C. maculata, P. maculiventris, and P. bioculatus on populations of CPB in field cages and small field plots. To determine the effects of B.t. tenebrionis on the survival, prey feeding, fecundity of C. maculata and P. maculiventris.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$11 700

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

## 0601-184

Sears, M
(519) 824-4120
Department of Environmental Biology; University of Guelph

**Threshold for potato leafhoppers on potatoes in Ontario**

A study of the relationship between leafhopper population and potato yield, leading to the determination of economic threshold for pesticide application.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1987 03* **END/FIN**: *1988 02*

## 0601-185

Sharma, M
(403) 632-6761
Alberta Environmental Centre

**Performance evaluation of herbicides under Alberta conditions**

To evaluate the efficacy of registered and experimental herbicides, alone and in mixtures with other herbicides, pesticides and adjuvants under the climatic conditions in northeastern Alberta. The results of field experiments are published annually in Research Report, Expert Committee on Weeds (Western Canada).

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1979 04*

## 0601-186

Sharma, M
(403) 632-6761
Alberta Environmental Centre

**Crop safety and tolerance to herbicides under Alberta conditions**

To evaluate tolerance of field crops to registered and experimental herbicides from direct applications or from residue carryover in soil. The results of the field experiments are published annually in the Research Report of the Expert Committee on Weeds (Western Canada).

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1980 04*

## 0601-187

Sharma, M
(403) 632-6761
Alberta Environmental Centre

**Behaviour and fate of herbicides in soil**

To study the activity, persistence and degradation of selected herbicides in soil and to evaluate the effects herbicides have on soil microflora and microbial processes under field and laboratory conditions. Results published in Research Report of the Expert Committee on Weeds and Alberta Environmental Centre reports will be published.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1985 04*

## 0601-188

Sharma, M
(403) 632-6761

Alberta Environmental Centre

**Environmental factors and performance of herbicides**

To examine the performance of registered and experimental herbicides, under controlled environment and field conditions, as influenced by environmental factors such as soil moisture, temperature and relative humidity. Reports are being published in scientific journals. Information presented at scientific meetings.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1984 04* **END/FIN**: *1991 03*

## 0601-189

Sherry, J
(416) 336-4813

Environment Canada; National Water Research Institute

**Screening technique for the detection of triazine herbicides in surface and groundwater**

To develop a battery of screening tests for the detection of a range of pesticides. Report by the end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

## 0601-190

Sherry, J
(416) 336-4813

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Atrazine detection**

To develop a method to detect atrazine in water.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$20 000

**START/*DÉBUT***: *1988 04* **END/FIN**: *1989 03*

## 0601-191

Sherry, J
Wilkinson, R
(416) 336-4813

Research and Applications Branch; National Water Research Institute; Environment Canada

**Screening techniques for the detection of pollutants**

Evaluate and adapt an enzyme immunoassay screening technique for the detection of pentachlorophenol in environmental samples. Complete evaluation/adaptation of screening test for the detection of Atrazine and transfer to the NWQL. Further improve RIA for the detection of PCDDs. Continue to implement the RIA for PCDDs in the NWQL. Use the RIA to detect PCDDs in pulp and paper mill effluent (subject to National Task Force requirements).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

**START/*DÉBUT***: *1988 04* **END/FIN**: *ongoing*

## 0601-192

Smith, S
(416) 978-5482

University of Toronto; Faculty of Forestry

**Potential for using egg parasitoids such as Trichogramma for biological control of forest tent caterpillar**

The purpose of this research is to investigate and assess the potential for using egg parasitoids such as Trichogramma to prevent or suppress epidemic populations of Forest Tent Caterpillar. This will be accomplished through field and laboratory studies designed to: Determine FTC egg availability. Examine Trichogramma species complex and distribution. Assess temporal acceptibility of FTC eggs to parasitism by Trichogramma.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$9 600

**START/*DÉBUT***: *1989 04* **END/FIN**: *1990 03*

## 0601-193

Smith, S
(519) 885-1211

Biology Department; University of Waterloo

**Barrier trapping technique for control of Glischrochilus quadrisignatus**

To test chemical attractants in barrier traps for control of sap beetle in raspberries and to assess dispersal among crops by mark capture.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$15 000

**START/*DÉBUT***: *1987 03* **END/FIN**: *1988 02*

## 0601-194

Solomon, K
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Update of reviews on amitrole and dichloroaniline herbicides**

Update two reports written in 1985 under OPAC research grants. These two reports were literature reviews, which are now out of date.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$2 400

**START/*DÉBUT***: *1989 09* **END/FIN**: *1990 03*

## 0601-195

Solomon, K
(519) 824-4120

Canadian Centre for Toxicology; University of Guelph; Dept. of Environmental Biology

**Exposure studies in the use of pesticides in the home garden and for landscape pest control**

Contractor will address exposure of professional applicators, homeowners and bystanders.

Financing/*Financement:* Ontario Ministry of Environment

$216 081

**START/*DÉBUT*:** *1989*

## 0601-196

Sommerstad, H
(306) 780-6001

Environment Canada; Conservation and Protection; Environmental Protection

**Pesticide disposal pit**

To study the degradation of dilute pesticide residues in a lined pit and evaluate the method for application to Saskatchewan Environment. A technology application/transfer project.

Financing/*Financement:* Environment Canada, Conservation and Protection

$30 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1990 03*

## 0601-197

Souza Machado, V
(519) 824-4120

Department of Horticultural Science; University of Guelph

**Assessment of pre-emergence herbicides for weed control in onions**

To continue evaluation of herbicides for onions.

Financing/*Financement:* Ontairo Ministry of the Environment, Ontario Pesticides Advisory Committee

$8 000

**START/*DÉBUT*:** *1987 03* **END/*FIN*:** *1988 02*

## 0601-198

Srivastava, B
(416) 973-5820

Environment Canada; Atmospheric Environment Service

**Optimization of fungicide use on field tomatoes using standard meteorological data**

To develop spraying schedules for fungicides in field tomatoes in Ontario from on-site and remote meteorological data. Report by end of March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$18 000

**START/*DÉBUT*:** *1989 04* **END/*FIN*:** *1990 03*

## 0601-199

Steiner, M
(403) 632-6761

Alberta Environmental Centre

**Integrated pest management for greenhouse pests**

This is an ongoing program currently working on western flower thrips control in greenhouse cucumbers and sweet potatoe whitefly in poinsettias. Annually, reports on pesticide bioassays are submitted and published in the Pesticide Research Report of Agriculture Canada, report on thrips program submitted to Farming for the Future, Alberta Agriculture.

Financing/*Financement:* Alberta Environmental Centre

Farming for the Future, Alberta Agriculture

**START/*DÉBUT*:** *1986 04*

## 0601-200

Stephenson, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Fate of sulfonylurea herbicides in Ontario**

To compare activity and mobility of chlorsulfuron, metsulfuron methyl and sulfometuron methyl in typical Ontario soil (lab and growth room study). Examine persistence and leaching of clorsulfuron (Glean) on rough turf at maximum rates for non-crop land weed control.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$31 000

**START/*DÉBUT*:** *1987 03* **END/*FIN*:** *1988 02*

## 0601-201

Strachan, W
(416) 336-4775

Environment Canada; Inland Waters Directorate; National Water Research Institute

**Pesticides in the atmosphere**

To determine air transport and precipitation of pesticides.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1987 03*

## 0601-202

Surgeoner, G
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Evaluation of Muscovy ducks as adjuncts to sanitation for control of the house fly, Musca domesticus L.**

In dairy operation (calf room) and swine operation, Muscovy ducks will be used to control flies. As well in the dairy, 4 pens of pregnant cows will be used : 2 with ducks and 2 controls. At a beef feedlot cow/duck interaction and duck territorial behaviour (when unconfined) will be monitored. At local horse stables, ducks will be released and monitored for producer acceptance. Compare efficacy of males vs. fe-

males (4 cages), counting flies remaining at 1 hr., 2 hrs., and 4 hrs. Video photography will be used at several facilities.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$21 800

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 04*

## 0601-203

Surgeoner, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Elimination of insecticide resistent house fly population by sanitation and susceptible fly release**

To continue sanitation programs on a dairy farm and swine facility to show efficacy and economic return of sanitation for house fly control. Releasing of susceptible flies and monitoring resistance to permethrin and dichlorvos in fly population in Davies' barn.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$17 500

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-204

Sutton, J
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Biological control of grey mold in strawberries**

In 1987-88, 80 potential natural biocontrol organisms for grey mold on strawberries were isolated; these included yeasts, mycelial fungi and bacteria. Each suppressed B. cinerea on the flowers and fruit but none on the leaves. In 1989-90 it is proposed to continue work from 1988-89 to examine the effectiveness of these organisms for B.c. biocontrol, examine the effect of simple nutrients on natural and applied biocontrol agents, examine the role of weather on biocontrol, examine optimum timing and integrate biocontrol with chemical control. Research is expected to continue for 2 more years.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$19 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-205

Sutton, J
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of strawberry and raspberry diseases**

To monitor populations of saprotrophic and weakly parasitic fungi and bacteria on strawberries and raspberries and determine temporal relationship with pathogens of B. cinerea and Zythia sp. Isolate same and assess impact of chlorothalonil and dodine on these antagonistic organisms.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$13 200

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0601-206

Swanton, C
(519) 824-4120

University of Guelph; Crop Science Department

**Integrated weed management for white beans (Phaseolus vulgaris)**

Lack of weed control in white beans can result in yield losses of up to 70%. Work in 1986 and 1987 showed that total pesticide use could be reduced by as much as 60% by selective placement of herbicide in bands. Along with cultivation practices, cost savings to average grower may be $30-85 per hectare. Work in 1988 dealt with weed control on 3 unlicenced cultivars: OAC Gryphon, OAC Sprint and OAC 87-2, planted in wide, medium and narrow rows. Work in 1989: Evaluate cultivar, row spacing and seed rate on weed density. Determine relationship between weed density and bean yield. Develop an economic threshold model for post emergence weed control in white beans.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$15 900

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-207

Thibodeau, P
(418) 643-2348

Mapaq; Service de recherche en phytotechnie de Québec

**Elaboration de modèles de prévision des stades phénologiques du fraisier et du framboisier.**

Prévoir l'arrivée des stades phénologiques de ces cultures et ainsi prévoir l'arrivée et le temps de dépistage des maladies et les ravageurs de ces cultures, ce qui permettrait d'intervenir au bon moment et ainsi assurer l'efficacité de la lutte aux ennemis de ces cultures. Ceci premettrait ainsi de rentabiliser les interventions de pesticides tout en diminuant les risques de pollution des aliments, de l'eau, du sol et des humains.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0601-208

Thibodeau, P
(418) 643-2348

Mapaq; Service de recherche en phytotechnie de Québec

**Evaluation de la résistance du Botrytis cinerea aux fongicides; mise au point d'une méthode rapide et efficace de détection de la résistance aux fongicides.**

Développer une méthode de détection de la résistance de B.cinerea afin de prévenir ou de stopper le développement de souches résitantes et de permettre une utilisation plus rationnelle des fongicides, ce qui permettrait de développer des stratégies de lutte intégrée contre les ennemis des cultures et de développer des moyens pour prévenir et réduire la pollution (aliments, eau, sol).

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0601-209

Thibodeau, P
(418) 643-2348

Mapaq; Service de recherche en phytotechnie de Québec

**Amélioration génétique de la résistance de la tomate de serre à la pourriture fusarienne.**

Développer des variétés de tomates de serre résistantes à la pourriture fusarienne et aux virus (TOMV) et adaptées au Québec, ce qui aura pour effet de réduire le nombre de fumigations stérilisantes du sol et de diminuer le nombre de traitements fongicides: donc moins d'exposition des producteurs aux fumigeants et fongicides, moins de danger de pollution des aliments, eau, sol et personnes par fongicides.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0601-210

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Non-target impacts of bran-bait formulations of grasshopper control agents in prairie ecosystems**

(as above) Final report due March 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

Agriculture Canada

**START/*DÉBUT***: *1989 01* ***END/FIN***: *1990 03*

## 0601-211

Tibbatts, W
(204) 983-7788

Environment Canada; Conservation & Protection; Environmental Protection

**Fate and effects of pesticides under a zero-till regime**

To assess what the off-target impacts of chemicals used under a zero-till regime are, and to assess their environmental significance in a small watershed in west-central Manitoba. Interim report giving direction for further study in spring 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1989 09* ***END/FIN***: *1992 09*

## 0601-212

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Mise au point d'un échantillonneur automatique pour l'analyse des pesticides dans l'eau des rivières.**

Le but de ce projet est d'ajouter une fonction supplémentaire à un échantillonneur automatique que nous avons conçu, construit et expérimenté dans l'intention d'y doser les métaux traces dans les cours d'eau. Objectifs: Concevoir un extracteur liquide-liquide à échelle réduite qui puisse opérer automatiquement en régime continu; s'assurer de l'obtention, par le cumul d'extractions, d'un prélèvement concentré qui reflète la teneur des pesticides dans le cours d'eau avec justesse et précision.

Financing/*Financement:* Fonds institutionnel de recherche

## 0601-213

Turgeon, J
(705) 949-9461

Forest Pest Management Institute

**Development of a coloured trap to detect and monitor the spruce cone maggot in black spruce seed orchards**

In preliminary screen tests conducted in 1988, colour traps were shown to hold promise as spruce adult samplers. In 1989 research is proposed to be conducted at Lake Bonner Tree Improvement Centre near Kapuskasking. Experimental design follows results obtained for European Larch Cone Maggot, where traps are located parallel to the ground.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$12 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-214

van Frankenhuyen, K
(705) 949-9461

Sault College of Applied Arts and Technology

**Effects of post spray weather on the foliage life of Bacillus thuringiensis**

To assess the post spray life of Bacillus thuringiensis in relation to weather and to test the effectiveness of protective adjuvants.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$11 900

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0601-215

Villeneuve, J
Campbell, P
(418) 654-2524

Université du Québec; INRS-eau

**Problématique de la contamination des eaux souterraines par les pesticides au Québec.**

Identifier les caractéristiques du milieu qui contrôlent le mouvement des pesticides vers et dans les nappes souterraines; identifier les caractéristiques des pesticides qui contrôlent leur évolution vers et dans les nappes souterraines; présenter des modèles de déplacement des pesticides vers et dans les nappes souterraines; à titre d'illustration, évaluer le devenir de quatre pesticides (atrazine, 2, 4-D, carbofurane et chlordane , etc.).

Financing/*Financement:* Québec, ministère de l'Environnement

$18 900

**START/*DÉBUT***: *1984* ***END/FIN***: *1985 04*

## 0601-216

Villeneuve, J
Campbell, P
(418) 654-2532
Université du Québec; INRS-eau

**Développement d'un nouvel outil simple et adaptable pour l'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides.**

Réaliser un logiciel d'évaluation de la vulnérabilité des eaux souterraines à la contamination par les pesticides. Cet outil repose sur la modélisation stochastique du transfert des pesticides dans la zone non-saturée. Ce logiciel fonctionne sur IBM-Pc et compatible.

Financing/*Financement:* Canada, ministère de l'Environnnment

Fondation Donner

$317 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1987*

## 0601-217

Villeneuve, J-P
(418) 654-2532
INRS - EAU

**Vulnérabilité des eaux souterraines à la contamination par les pesticides**

D'établir une méthodologie d'évaluation du potential de vulnérabilité des eaux souterraines à la contamination par les pesticides. On a développé le modéle 'Vulpest', qui permet d'effectuer la simulation stochastique du cheminement de la contamination dans la zone vadose. Sont disponibles: le rappor final en français, une synthèse en français et en anglais, et le logiciel Vulpest, version 2.0 avec son manuel d'utilisation.

Financing/*Financement:* Environnement Canada, Conservation et protection

Ministère d'approvisionnements et services Canada

$151 959

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1987 03*

## 0601-218

Waite, D
(306) 780-6438
Environment Canada; Environmental Protection

**Pesticides movement in a prairie watershed**

To assess the extent of movement of pesticides from agricultural land to surrounding water bodies.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$36 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-219

Waite, D
(306) 780-6438
Environment Canada; Environmental Protection

**Spring run-off of pesticides in Saskatchewan**

To measure three pesticides in dugouts after spring run-off. Report to be produced by April 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 03*

## 0601-220

Waite, D
(306) 780-6438
Environment Canada; Environmental Protection

**South Saskatchewan watershed**

To determine the distribution and impact of pesticides entering the watershed.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$30 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 03*

## 0601-221

Waite, D
(306) 780-6438
Environment Canada; Conservation and Protection; Environmental Protection

**South Saskatchewan watershed study**

Measure the use of agricultural pesticides in a small agricultural watershed and the movement of these chemicals into and persistance in the surface and groundwater.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

Toxics Program Funding

$110 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1989 03*

## 0601-222

Waite, D
(306) 780-6438
Environment Canada; Conservation and Protection; Environmental Protection

**Thermal degradation of pesticides**

Work done at Wastewater Technology Centre and River Road Labs of Environment Canada. Technical work completed, final summary being prepared. A technology transfer project.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1983 06* **END/FIN:** *1987 03*

## 0601-223

Waite, D
(306) 780-6438
Environment Canada; Conservation and Protection; Environmental Protection

**Persistence and movement of picloram herbicide in a northern Saskatchewan watershed**

To measure the persistence of picloram on the Jummy Lake Air Weapons Range and the movement of the chemical off of the target site. Reports completed.

Financing/*Financement:* Department of National Defence

$60 000

**START/*DÉBUT*:** *1982 08* **END/FIN:** *1987 03*

## 0601-224

Walker, V
(613) 545-6123

Queen's University; Biology Department

**Molecular genetic basis of drug and pesticide resistance in insects**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$109 560

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0601-225

Watson, A
(514) 398-7851

Collège MacDonald; Laboratoire de Recherche sur les Biopesticides

**Programme bioherbicides pour les secteurs forestier et urbain.**

Les bioherbicides constituent l'alternative la plus récente dans le domaine du contrôle et de la répression des mauvaises herbes. Spécifiques et naturels, ils représentent une alternative aux pesticides chimiques. Les objectifs sont l'identification, le développement et la mise à l'échelle des procédés de production de produits bioherbicides à potentiel commercial. En plus des travaux de laboratoire, une étude permettra de mieux cerner la problématique des bioherbicides et de préciser les besoins du marché.

Financing/*Financement:* Centre québécois de valorisation de la biomasse

Québec, ministère de l'Environnement

Université McGill

$1 500 000

**START/*DÉBUT*:** *1988 05* **END/FIN:** *1991 04*

## 0601-226

Wayland, M
Boag, D
(403) 492-4161

University of Alberta

**Fate of carbofuran and its effect on aquatic macroinvertebrates in prairie dugouts**

1. To examine the immediate and seasonal effects of carbofuran on natural populations of benthic macroinvertebrates in prairie dugouts. 2. To examine the rate of degradation of carbofuran in the water column, in the interstitial water, and in the sediments.

Financing/*Financement:* World Wildlife Fund

Delta Waterfowl Research Station

Environment Canada, Conservation & Protection

$21 600

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1988 08*

## 0601-227

Weinberger, P
(613) 564-2334

University of Ottawa; Biology

**Differential uptake of herbicides by plants and soils**

none given

Financing/*Financement:* Hoechst Canada Inc.

$486 679

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1989 03*

## 0601-228

Weinberger, P
(613) 564-2334

University of Ottawa; Biology

**A new factor to consider in pesticide fate transport studies**

none given

Financing/*Financement:* Ontario Pesticides Advisory Committee

$9 500

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0601-229

Weseloh, D
(416) 336-4968

Environment Canada; Canadian Wildlife Service

**Effects of azinphos-methyl, phosalone and phosmet on cholinesterase activity, reproductive success etc. of birds in Ontario orchards**

To compare the impacts of three insecticides on two bird species inhabiting apple orchards near Cambridge, Ont.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$35 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0601-230

Williamson, D
(204) 945-7030

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Hexazinone (Velpar-L) monitoring of groundwater in Agassiz Provincial Forest**

To monitor the fate and distribution of hexazinone in groundwater following application for forestry management. This work has been accepted for publication: Williamson, D.A. 1989. Hexazinone residues in surface and groundwater at two sites within Agassiz Provincial Forest, Manitoba, Canada. Water Pollution Research Journal of Canada (23) 3:?

Financing/*Financement:* Manitoba Dept. of Environment and Workplace Safety and Health

$45 000
**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 05*

## 0601-231

Winston, M
(604) 291-4292
Simon Fraser University

**Pesticide resistance mechanisms in a beneficial pollinating insect**

To rapidly assay the impact of new pesticides and formulations on pollinators.

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1981*

## 0601-232

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Derivation of a site-specific water quality objective for atrazine in the Yamaska River, Québec**

To derive a site-specific water quality quideline to manage water resources and to assess water quality problems in the Yamaska River, Québec. Report by March 1990.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$24 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0601-233

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Pesticides in rainwater**

To assess the contribution of pesticides in rainwater to aquatic contamination. Report to be produced in April, 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$10 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-234

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Lindane**

To assess the impact of lindane into aquatic systems. Report to be produced in April, 1989.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$12 500

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1989 03*

## 0601-235

Wong, M
(819) 953-3197

Environment Canada; Inland Waters Directorate; Water Quality Branch

**Modelling the behaviour of pesticides in water**

To assess the accuracy of computer models in predicting the distribution of pesticides in the environment.

Financing/*Financement:* Pesticides Program Funding (ECCP)

$25 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 03*

## 0601-236

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Impact of forest herbicides on terrestrial environment - soil and vegetation quality**

To study the indirect effects of herbicide use on vegetation, soil and wildlife habitat in the boreal forest of Manitoba. The herbicide glyphosate has been studied in the Pine Falls area of eastern Manitoba. A procedures manual has been produced and a report on the first three years of study will be available in April 1988.

Financing/*Financement:* Canada/Manitoba Forest Renewal Agreement

$94 500

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1989 03*

## 0601-237

Wyatt, G
(613) 545-6120

Queen's University; Biology Department

**Insect biotechnology and agriculture**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$12 211

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 07*

## 0602-1

Barber, K
(705) 949-9461

Sault College of Applied Arts & Technology

**Relative sensitivity to Bacillus Thuringiensis of non-target caterpillers potentially serving as food for young grouse chicks**

Establish and supplement laboratory cultures of the most abundant and important species of caterpillars feeding on V. angustifolium. Establish greenhouse production of V. angustifolium for foliage production. Determine the relative sensitivity to B.t. of the most abundant and important species. Produce a field discrimination key to at least the most abundant and important species of caterpillars on V. angustifolium. Describe the basic phenologies and life histories of the most abundant and important species.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$26 200

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1992 03*

## 0602-2

Barron, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of root-knot nematode Meliodogyne hapla in economic host plants destroying fungi**

To isolate nematode-destroying fungi from soils for experimental seed treatment.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 400

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0602-3

Beaudet, R
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Etude microbiologique d'un traitement aérobic simplifié du lisier de porc.**

Effectuer le suivi microbiologique du procédé de traitement du lisier de porc de l'usine de Saint-Elzéar. Etudier la flore mésophile et thermophile présente dans la mousse et la partie liquide contenue dans le réacteur; suivre l'implantation et l'évolution de la flore microbienne dominante et active. Caractériser le ou les microorganismes dominants. Etudier la présence de certains organismes pathogènes. Etudier la formation d'un biofilm sur des surfaces fixes incorporées dans le réacteur. Etudier la stabilité et la conservation des bactéries actives lors de leur entreposage.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnnment

$38 000

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 03*

## 0602-4

Bendell, J
(416) 978-2403

University of Toronto

**Impact of bacillus thuringiensis on chicks of spruce grouse, non-target insects, and small birds and mammals**

Determine the foods of Spruce Grouse chicks up to 3 weeks of age by direct observation and collecting them. Test the hypotheses: The application of B.t. at operational levels does not affect the abundance of insects of low vegetation and the forest floor, especially larval Lepidoptera. Larval Lepidoptera are not needed for the growth and survival of chicks of Spruce Grouse. Other birds, especially the White-Throated Sparrow, and small mammals, especially the Masked Shrew are not affected by the application of B.t. at operational levels.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$14 450

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0602-5

Bisaillon, J
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Développement d'un procédé anaérobie de désodorisation du lisier de porc.**

Démontrer à court terme le potentiel de désodoration d'un consortium bactérien dégradant le phénol et le p-crésol en se rapprochant le plus possible des conditions rencontrées dans la fosse lors de l'entreposage et en évaluer la performance à l'aide d'un procédé faisant appel à des surfaces fixes.

Financing/*Financement:* Québec, ministère de l'Environnement

$72 859

**START/*DÉBUT***: *1988 10* ***END/FIN***: *1991 03*

## 0602-6

Boland, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of Sclerotinia sclerotiorum in canola and white beans**

Evaluate the potential for fungi isolated from canola and white bean flowers to prevent diseases caused by Sclerotinia sclerotiorum.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$14 500

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0602-7

Bull, G
Hyslop, W
(604) 682-8777

Nova Tec Consultants Inc.

**Assessment of Takla Landing contour trench ground disposal system - biomat performance**

To study biomat development and performance on natural soil, imported sand and geotextile cloth leading to more refined design criteria for the ground disposal of septic tank effluent under adverse site conditions. Final report due Nov. 1989.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Mortgage & Housing Corporation

$19 337

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 11*

## 0602-8

Burpee, L
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of Dandelions in Turfgrass Swards**

To complete field observations and data analysis from 86/87; to complete an evaluation of virulence and agressiveness of fungal isolates; to develop an improved method of innoculating dandelions and evaluate same under field conditions.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesitcides Advisory Committee

$7 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 02*

## 0602-9

Burpee, L
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Developing an effective dissemination procedure for the snowmold control agent Typhula phacorrhiza**

To complete evaluation of storage technique for inoculum and to improve the application techniques.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0602-10

Chagnon, M
(514) 773-9221

Consultants CVIAB Inc

**Modes alternatifs de contrôle des insectes dans les agroécosystèmes**

L'objectif de cette étude est de circonscrire et proposer des orientations concrètes et pertinentes d'application, de mise au point technique, de développement et de recherche en regard des modes alternatifs à l'usage des pesticides en milieu agricole. A partir de l'identification des problèmes causés par des ravageurs (insectes) dans l'agriculture québécoise, le répertoire et l'évaluation des modes alternatifs à l'usage des pesticides permettront de dégager les avenues d'application à court, moyen et long terme. L'opportunité commerciale de certains modes alternatifs recommandés sera évaluée dans le volet étude de marché.

Financing/*Financement:* Québec, ministère de l'Environnement

Centre québécois de valorisation de la biomasse

$200 000

**START/*DÉBUT***: *1988 06* ***END/FIN***: *1989 06*

## 0602-11

Chahal, D
(514) 687-5010

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Développement d'un procédé pour la diminution microbiologique de la pollution causée par du lisier**

Le but du projet est de développer des techniques et des conditions optimales de fermentation pour éliminer les polluants présents dans le lisier et en même temps de produire la nourriture utilisable pour les animaux.

Financing/*Financement:* Québec, ministère de l'Environnement

$40 000

## 0602-12

Chan, C
(416) 890-2555

Mann Testing Laboratories Ltd.

**Application of Robotics to the Analysis of Trace Organics**

To design, test and deliver a robotics system to provide fully automated sample preparation of fish and biological tissues prior to analysis for trace organics.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$170 000

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1987 03*

## 0602-13

Ciborowski, J
(519) 253-4232

University of Windsor; Dept. of Biological Sciences

**Standardized rearing materials and procedures for Hexagenia, a benthic bioassay organism**

Collection and cold-storage maintenance of genetically homogeneous Hexagenia egg stocks for distribution to laboratories on request. Synthesis of a standard aquatic sediment and diet from commercially available materials suitable for quickly rearing contaminant-free benthic aquatic invertebrates. Comparison of larval Hexagenia growth on natural (MOE bioassay control site) sediment with synthetic sediment. Assessment of factors contributing to variation in Hexagenia growth and body size. Assessment of influence of sediment-bound organichlorine contaminants on substrate preference, survival, development and bioaccumulation of Hexagenia larvae. Expansion of sediment/diet protocols to scales suitable for mass-culture of rapidly-growing contaminant-free bioassay test organisms.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$48 300

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1991 04*

## 0602-14

Ciborowski, J
(519) 253-4232

University of Windsor; Department of Biological Sciences

**Biomonitoring Protocols for Adult Aquatic Insects**

To develop procedures to collect adult insects to assess the degree of contamination of waters from which they have emerged. To evaluate seasonal variations in contaminants in the Lake Huron - Lake Erie connecting channel. To assess the transfer of contaminants from aquatic to terrestrial systems via adult insects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$76 900

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 06*

## 0602-15

Coleman, R
Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Microbiological processes in waste management**

To study and provide data/information on domestic, industrial and agricultural wastes using microbiological processes and systems.

Financing/*Financement:* Alberta Agriculture

Alberta Technology Research & Telecommunications

Alberta Environment

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1991 12*

## 0602-16

Cullen, W
(604) 228-6225

University of British Columbia

**Synthesis of commercially important active insect growth regulators, insecticides and herbicides**

none available

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT*:** *1986* **END/FIN:** *1988 03*

## 0602-17

Cullimore, D
(306) 584-4556

Regina Water Research Institute

**Monitoring microbial activity in lab anaerobic filters treating septic tank effluent at low temperatures**

By monitoring the dynamic microbiological processes taking place as the biofilm develops on both plastic and geosynthetic media contribute to the understanding of basic phenomena leading to the design of improved anaerobic septic tanks effluent filters under Canadian climatic conditions. Final reports unpublished by the sponsor - 'Monitoring Microbial Activity in Laboratory Anaerobic Filters Treating Septic Tank Effluent at Low Temperatures', RWRI Report Number 54, Dec. 1987 and 'A Statistical Interpretation of the Microbial Activity in Laboratory Septic Tank Effluent Filter Reactors at Low Temperature', RWRI Report Number 56, Mar. 1988. Both reports by Dr. D. Cullimore and staff at Regina Water Research Institute, University of Regina.

Financing/*Financement:* Environment Canada, Conservation & Protection

$13 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1988 03*

## 0602-18

Cunningham, J
(705) 949-9461

Sault College of Applied Arts & Technology

**Development of gypsy moth nuclear polyhedrosis virus as a microbial insecticide for use in Canada**

Determine NPV dosage which is an improvement on cost/benefit over B. t., i.e. lower dose, lower volume, single application. Compare FPMI formulation (Disparvirus) with Calliope formulation (Lymantrin). Assess feasibility of reducing application volume by 4. Continue epizootiological studies with naturally occurring and artifically disseminated NPV.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$24 800

**START/*DÉBUT*:** *1989 04*

## 0602-19

Daniels, S
(416) 336-4768

Research and Applications Branch; National Water Research Institute; Environment Canada

**Electrokinetic and enzymatic detection of sub-cellular toxic and mutagenic effects**

To establish the laboratory capability of electrophoretically detecting nuances of genetic material (DNA). To evaluate the ability of these procedures to detect genetic components produced by selective enzymatic lysis.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0602-20

Danielson, R
(403) 220-5264

Kananaskis Centre for Environmental Research; University of Calgary

**Inoculation technology study**

To develop and test methods suitable for large scale inoculations of container-grown white spruce and lodgepole pine with 'difficult to inoculate' mycorrhizal fungi. Reports available.

Financing/*Financement:* Alberta Forest Service

$9 789

**START/*DÉBUT***: *1986 07* **END/*FIN***: *1988 01*

## 0602-21

de la Noüe, J
(418) 656-3952

Groupe de recheche en recyclage biologique et aquiculture (GREREBA)

**Optimisation de cultures intensives de microalgues par fluctuations lumineuses rapides et incidence de celles-ci sur la qualité de la biomasse.**

Etablir les paramètres d'application du rendement énergétique de cultures ( biomasse produite/énergie fournie) ; pour différents types d'éclairement (fluctuant ou stable, monochromatique ou non), résoudre le problème de choix, de la fiabilité et du temps de réponse du système de mesure de l'intensité lumineuse; optiminer un système d'éclairage intermittent; étudier les conséquences d'un régime lumineux intermittent sur la prise en charge des nutriments et la qualité de la biomasse. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Club Rotary

Fonds pour la formation des chercheurs et l'aide à la recherche

$60 000

**START/*DÉBUT***: *1984 01* **END/*FIN***: *1989 12*

## 0602-22

de la Noüe, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Biotraitement d'un effluent anaérobie de lisier de porc par culture de microalgues**

But: obtenir, pour le lisier de porc, un effluent final qui peut être rejeté dans l'environnement. Objectifs: 1- Caractériser l'effluent anaérobie; 2- Comparer les performances d'épuration et de production de biomasse sur un tel effluent; 3-Optimiser les conditions de culture pour l'espèce la plus performante.

Financing/*Financement:* Agence française pour la maîtrise de l'énergie

Elf-Aquitaine

$30 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1989 12*

## 0602-23

de la Noüe, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Phytoépuration, phytoproduction et productions secondaires associées**

But: mettre au point des procédés de traitement tertiaire d'eaux usées et de production de substances extraites des microalgues. Objectifs: 1- Sélectionner des algues en fonction de leurs capacités d'épuration et de production de PHVA; 2- Installer et opérer une unité de démonstration pour le biotraitement tertiaire d'eaux usées.

Financing/*Financement:* Programme d'échanges franco-québécois

Divers organismes français

$125 000

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1988 12*

## 0602-24

de la Noüe, J
Bélanger, G
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Assainissement des eaux usées par étang d'oxydation: influence des facteurs physiques et chimiques sur la croissance des microalgues**

But: cerner les principaux facteurs susceptibles d'influencer les populations d'algues dans un étang d'oxydation. Objectifs: 1- suivre les conditions physiques et chimiques d'un étang d'oxydation (St-Etienne de Lauzon) sur une base annuelle; 2- mesurer la productivité primaire sous diverses conditions; 3- identifier les espèces présentes de phytoplancton et leur succession; 4- évaluer la performance de rendement épuratoire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$55 000

**START/*DÉBUT***: *1985 09* **END/*FIN***: *1988 02*

## 0602-25

de la Noüe, J
Cauchon, N
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Fermenteur aérobie à films fixes pour le traitement du lisier de porc.**

Obtenir une oxydation aussi complète que possible et rapide du lisier de porc avec une dépense énergétique relativement faible, à l'aide d'un digesteur conçu pour installation à la ferme. Caractériser la population microbienne à l'oeuvre dans un digesteur aérobie multistades à films fixes opérant avec du lisier décanté de porc; tenter d'obtenir un fonctionnement en conditions auto-thermophiles;optimiser le fonctionnement du digesteur.

Financing/*Financement:* Conseil des recherches en agro-alimentaire et pêcheries du Québec

Canada, ministère de l'Agriculture

$77 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 03*

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## 0602-26

de la Noüe, J
Cyr, B
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Digesteur aérobie multistades à films fixes pour le traitement du lisier de porc**

But: mettre au point et optimiser un système de digestion aérobie du lisier de porc. Objectifs: 1- Concevoir et installer à la ferme un digesteur aérobie; 2- Caractériser les paramètres d'opération d'un tel digesteur; 3-Caractériser les populations microbiennes fixées à l'oeuvre; 4- Caractériser la composition de la biomasse microbienne en vue d'un recyclage en alimentation animale.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Agriculture

Conseil des recherches en agro-alimentaire et pêcheries du Québec

$102 500

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1990 06*

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## 0602-27

de la Noüe, J
Dakhama, A
(418) 656-3952

Groupe de recheche en recyclage biologique et aquiculture (GREREBA)

**Etude des interactions entre microalgues et bactéries.**

Documenter les inhibitions-stimulations de couples identifiés microalgues-bactéries; établir la spécifité et la stabilité de l'interaction; déterminer la nature de l'interaction; évaluer l'application de ces connaissances aux systèmes de cultures intensives de microalgues. Rapport disponible.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Gouvernement du Maroc

$30 000

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1990 12*

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## 0602-28

de la Noüe, J
Lavoie, M
(418) 656-2952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Filtre biologique pour circuit fermé d'élevage aquicole**

Mettre au point un système efficace de filtration biologique des effluents de bassins d'élevage de poisson. Concevoir et réaliser un filtre biologique à bactéries immobilisées; accélérer la mise en condition d'un tel filtre; optimiser les paramètres d'opération.

Financing/*Financement:* Conseil des recherches et services agricoles du Québec

Fonds pour la formation des chercheurs et l'aide à la recherche

Fonds institutionnel de recherche

$71 528

**START/*DÉBUT***: *1986 05* ***END/FIN***: *1990 12*

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## 0602-29

de la Noüe, J
Murray, P
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Evaluation à l'échelle pilote d'un aérateur à cheminement prolongé**

But: concevoir et caractériser les performances d'un aérateur simple, peu coûteux et efficace pour la digestion d'effluents chargés. Objectifs: 1- Concevoir un nouveau type d'aérateur; 2- Etablir les paramètres d'opération d'un tel aérateur; 3- Vérifier sa performance avec le lisier de porc.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$12 000

**START/*DÉBUT***: *1985 06* ***END/FIN***: *1987 09*

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## 0602-30

de la Noüe, J
Sérodes, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Biotraitement des pollutions et biotechnologie solaire.**

Exploiter le potentiel des cultures de microalgues pour fins de dépollution. Mettre au point des systèmes biotechnologiques efficaces de dépollution des effluents d'origine urbaine; optimiser la production de biomasses de microalgues par biotechnologie solaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$204 000

**START/*DÉBUT***: *1985 11* ***END/FIN***: *1988 10*

## 0602-31

de la Noüe, J
Sérodes, J
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Epuration des eaux usées urbaines par algues bioflo-culantes**

But: mettre au point un système opérationnel de traitement tertiaire des eaux usées domestiques par culture de microlagues. Objectifs: 1- Sélectionner les algues (mélange) les plus performantes; 2- Etablir les conditions optimales avec un mélange d'algues filamenteuses; 3- Vérifier sur le terrain l'efficacité d'épuration (N, P) du système.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$130 000

**START/*DÉBUT***: *1985 11* **END/*FIN***: *1988 10*

## 0602-32

de la Noüe, J
Talbot, P
(418) 656-3952

Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Valorisation d'effluents polluants et production de biomasse par culture d'une cyanophycée filamenteuse: aspects fondamentaux et appliqués**

Mettre au point un système de biotraitement tertiaire du lisier de porc par culture de microlagues. Caractériser le comportement physiologique de Phormidium bohneri sous diverses conditions de lumière et de température et la biomasse obtenue (composition). Enfin, mettre au point un système de culture sur le terrain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Centre de recherche pour le développement international

Fonds pour la formation des chercheurs et l'aide à la recherche

$76 500

**START/*DÉBUT***: *1986 01* **END/*FIN***: *1990 12*

## 0602-33

Dubeau, H
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Caractérisation moléculaire des altérations structurales des gènes eucaryotes mutés in vitro par divers agents.**

Développer une technologie permettant l'étude des altérations induites dans la structure des gènes eucaryotes par divers agents mutagènes. Faire la caractérisation des altérations induites dans la structure du gène CANI de Saccharomyces cerevisiae et du gène hprt de lymphocytes humains par les rayons X, l'ozone et l'EMS.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$60 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1989 03*

## 0602-34

Dubeau, H
(514) 282-4118

Université du Québec à Montréal; Département des sciences biologiques

**Caractérisation moléculaire des mutants induits in vivo par les drogues antinéoplasiques, chez l'humain.**

Utiliser les techniques de génie génétique pour caractériser les altérations du gène hprt dans les lymphocytes des patients en chimiothérapie et des travailleurs en administrant ces drogues. Déterminer les types et fréquences d'altération observés chez le personnel et les patients exposés aux drogues antinéoplasiques afin de déterminer leur spécificité.

Financing/*Financement:* Société de recherche sur le cancer

$68 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1989 06*

## 0602-35

Falter, H
(705) 675-1151

Laurentian University; Chemistry

**Protease activation of bacillus thuringiensis crystal toxins**

Assess the role of activation of Bt toxins to the toxicity towards target insect larvae of commercial interest. Report is not available.

Financing/*Financement:* Canadian Industries Ltd.

Ontario Ministry of Colleges and Universities

$101 026

**START/*DÉBUT***: *1987 10* **END/*FIN***: *1989 09*

## 0602-36

Faulkner, P
(613) 545-2450

Department of Microbiology and Immunology; Queen's University

**Development of a monoclonal antibody probe for eggs and larvae of the parasite Pholetesor ornigis**

Develop a monoclonal antibody probe to detect eggs and larvae parasite of spotted tentiform leafminer (Phyllonorycter blancardella). Once specific probes for this parasite are identified, they can be used to develop a kit for the filed or laboratory detection of the parasite. Where the parasite is present, use of chemical sprays is not needed.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$8 500

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1988 04*

## 0602-37

Fitz-James, P
not available

Department of Microbiology and Biochemistry; University of Western Ontario

**Field test of new corn rootworm pathogen**

To determine minimal concentration of cultures of Bacillus laterosporus to achieve rootworm control.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$6 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 02*

## 0602-38

Fleising, V
(403) 220-6377

Department of Anthropology; University of Calgary

**Biotechnology and social change, social implications and the 'culture' of the biotechnology industry**

The study of conflict resolution in complex societies. How the regulatory process deals with the translation of biological theory into engineering.

Financing/*Financement:* Social Sciences and Humanities Research Council

## 0602-39

Green, C
(604) 291-4292

Simon Fraser University

**Ecology and toxicology of salmonids and freshwater invertebrates**

none available

Financing/*Financement:* National Science & Engineering Research Council

$19 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

## 0602-40

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Biodégradation des cyanures dans les environnements miniers.**

Sélection et adaptation de souches bactériennes indigènes à la dégradation des cyanures des effluents de mines d'or.

Financing/*Financement:* Fonds personnel

## 0602-41

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Décomposition de l'arsénopyrite aurifère par thiobacillus ferrooxydans.**

Récupération de métaux précieux à partir de minerais réfractaires (arsénopyrite) et confinement des espèces toxiques (arsenic et scorodite) pour en disposer d'une manière sécuritaire.

Financing/*Financement:* Fonds personnel

## 0602-42

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Biological treatment of pulp and paper wastewater**

Develop and demonstrate biological treatment technologies for reducing BOD, aquatic toxicity, and organochlorines in pulp and paper wastewaters. Reports available from E. Hall.

Financing/*Financement:* Ontario Ministry of Environment

Environment Canada, Conservation & Protection

Ministry of State for Science & Technology Biotechnology Program

Panel on Energy Research & Development

$388 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *ongoing*

## 0602-43

Hall, E
(416) 336-4715

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**PAPRICAN - WTC anaerobic treatment study**

Assess anaerobic treatability and toxicity reduction for TMP effluent after whitewater system closure.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Pulp and Paper Research Institute of Canada

$290 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1989 04*

## 0602-44

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Anaerobic treatment technology transfer and demonstration**

Develop and demonstrate novel high rate anaerobic process technologies for treating concentrated organic wastewaters, and to transfer technical information to potential users of anaerobic treatment systems. Reports available from E. Hall.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

$93 000

**START/*DÉBUT***: *1981 00* **END/*FIN***: *ongoing*

## 0602-45

Hall, E
(416) 336-4715

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Anaerobic pretreatment of industrial wastewater, discharge to municipal WPCP**

Assess potential of anaerobic pre-treatment of industrial park effluent at Portage la Prairie, Manitoba, prior to discharge to a municipal treatment facility.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

Manitoba Water Services Board

$298 000

**START/*DÉBUT***: *1986 02* ***END/FIN***: *1987 10*

## 0602-46

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Process monitoring and control for anaerobic treatment systems**

Development and demonstration of automated monitoring and control strategies for maintaining process performance efficiency during anaerobic treatment of inhibitory industrial wastewaters.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ministry of State for Science and Technology Biotechnology Program

$288 500

**START/*DÉBUT***: *1986 00* ***END/FIN***: *1990 12*

## 0602-47

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Anaerobic treatment of complex industrial wastewaters**

Develop anaerobic treatment technology for application to toxic and inhibitory industrial wastewaters. Reports available from E. Hall.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ontario Ministry of Environment

Ministry of State for Science and Technology Biotechnology Program

$1 057 000

**START/*DÉBUT***: *1984 00* ***END/FIN***: *1989 03*

## 0602-48

Hartwick, E
(604) 291-4292

Simon Fraser University

**Population processes, environmental factors and community structuring in an estuarine environment**

none available

Financing/*Financement:* National Science & Engineering Research Council

$81 980

**START/*DÉBUT***: *1983 04* ***END/FIN***: *1989 03*

## 0602-49

Hayes, M
Smith, I
(519) 823-8800

Department of Pathology; Ontario Veterinary College; University of Guelph

**Pathogenesis of Neoplastic Diseases Afflicting Feral Fish**

To investigate the role of pre-neoplastic lesions, in skin and liver of wild fish developing full-blown neoplasia, and the value of serum chemistry in detecting general health related to liver disorders. To include pre-neoplastic lesions in laboratory fish under controlled conditions, in an effort to document their promotion to neoplasia by sediment. To integrate studies into initiation and promotion of pre-neoplastic lesions. Initiating agents may be detectable through genotoxicity assays.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$64 700

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 05*

## 0602-50

Hebert, P
(519) 253-4232

Great Lakes Institute; University of Windsor

**Clam Caging Experiments using Elliptio Complanatus as Biomonitors for Toxic Contaminants in Water**

To assess the validity of using Elliptio Complanatus for monitoring water quality in the Great Lakes and to make recommendations on the use in situ populations of Lampsilis Radiata - a clam native to both the Great Lakes, rivers and other lakes in Ontario.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$18 700

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1986 06*

## 0602-51

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Use of biological processes in drinking water treatment**

The objective is to lay the groundwork for introduction of biological processes into Canadian drinking water treatment practice. In this study the extent of mineraliztion of cyanobacterial breakdown products will be determined in batch cultures, and kinetic data for biodegradation will be obtained in continuous bioreactor experiments. The results will allow preliminary sizing of biological processes to re-

move these compounds and hence provide an indication of feasibility.

Financing/*Financement:* National Research Council, Biotechnology Research Institute

$210 215

**START/*DÉBUT***: *1986 08* **END/*FIN***: *1988 03*

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## 0602-52

Huck, P
Smith, D
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Process optimization for biological treatment of drinking water**

Objectives include: evaluation of extent to which biological treatment can reduce the level of disinfectant required and associated by-product formation; determination of the range of process conditions capable of producing substantial removals of total and assimilable organic carbon with acceptable levels of bacterial biomass in process effluent; establishment of whether biologically stable water can be produced following ozonation, without GAC; plus others.

Financing/*Financement:* National Sciences and Engineering Research Council

$436 122

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1990 10*

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## 0602-53

Jaques, R
(519) 738-2251

Agriculture Canada; Research Station

**Effectiveness of the granulosis virus in management of the Codling Moth in apple orchards and its environmental impact**

This study is to provide data on the effect of the granulosis virus on non-target species in apple orchard; sunlight greatly affects the stability of the virus; further studies are required to identify material to enhance its efficacy potential. Conduct efficacy trials in the laboratory. Conduct non-target and impact in small plots and commercial orchards. Evaluate materials to protect virus against inactivation by sunlight. Assemble data to support registration.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$8 300

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

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## 0602-54

Jefferson, C
(416) 985-7671

Curry Jefferson Environmental Services

**Organisms as Biomonitoring Tools for Monitoring of Site-Specific Industrial and Municipal Discharges**

By means of literature review, provide a data base on biomonitoring organisms to provide guidance as to which organisms are best for specific situations and provide direction for new biomonitoring candidates.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$13 400

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1988 05*

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## 0602-55

Jolicoeur, C
Beaubien, A
(819) 821-7565

Université de Sherbrooke; Département de chimie

**Application de la microcalorimétrie dynamique au contrôle de bioprocédés d'épuration anaérobies**

Les travaux de recherche visent à exploiter la relation existant entre l'activité métabolique et microorganismes et la quantité de chaleur dégagée en appliquant la microcalorimétrie dynamique au contrôle et à la régulation de bioprocédés anaérobies industriels.

Financing/*Financement:* Institut de recherche en biotechnologie

$261 340

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1987 09*

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## 0602-56

Juzwik, J
Saunders, J
unavailable

Pest Management Section; Ministry of Natural Resources

**Soil solarization for control of root rots in Ontario forest nurseries**

The objectives of the proposed trials are to determine the effect of soil solarization on: Populations of Cylindrocladium floridanum in nursery soil the season following treatment and on disease incidence in white spruce transplanted into the trial area. And on populations of Fusarium, Cylindrocarpon, and Rhizoctonia in nursery soil before and after treatment. (Note: Disease incidence would be monitored during the subsequent year after seeding with white pine).

Financing/*Financement:* Ontario Pesticides Advisory Committee

$8 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

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## 0602-57

Kevan, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Microbiol biocontrol for suppressing milkweed feed production using yeasts to curtail fertilization**

To follow up on previous research to test the efficacy of yeasts in preventing fertilizaiton.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$7 600

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1988 02*

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## 0602-58

Knowles, P
(807) 343-8672

Lakehead University; Dept. of Biology, School of Forestry

**Genetic differences between damaged and healthy sugar maple throughout Ontario**

To determine whether healthy sugar maple stands are genetically different from damaged stands using isozyme characterization of bud tissue and multivariate statistical analyses; to determine whether healthy sugar maple trees are genetically different from adjacent damaged trees within the same stand using the same laboratory and statistical techniques. A final report will be submitted March 31, 1990.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$21 250

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0602-59

Kosaric, N
(519) 661-3119

University of Western Ontario; Dept. of Chemical & Biochemical Engineering

**Research projects in biochemical and food engineering**

Projects include: anaerobic sludge granulation process treatment of industrial wastewaters in a pilot plant for treatment of pulp and paper wastes - study hydrodynamic conditions affecting performance of UASBRs; detoxification of industrial wastewaters with algae - removal and degradation of chlorinated hydrocarbons and develop a novel photobioreactor system with internal reactor illumination; breaking industrial emulsions with specific microbes of particular interest in enhanced oil recovery and petroleum industry. Reports and publications are available with some restrictions.

Financing/*Financement:* Paques Lavalin

Natural Sciences & Engineering Research Council

$494 758

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 01*

## 0602-60

Kushner, D
Williams, D
(416) 978-5759

University of Toronto

**Control of mosquito larvae by bacterial toxins: search for an algal vector**

Overall objectives: To identify species of algae which should serve as practical vectors of bacterial toxins to mosquito larvae. To carry out an initial field survey of occurrence of algae in mosquito habitats. To set up mosquito feeding stations in 3 or more sites each at 1-2 locations in Ontario to collect eggs from same for subsequent laboratory study of larval feeding behaviour. To study population changes in naturally-occurring and introduced algal species and to determine accompanying changes in mosquito larval populations. To study growth and survival under field conditions of introduced strains of cyanobacteria susceptible to insertion of genetic markers, especially those that determine bacterial toxins, and their ingestion by mosquito larvae.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0602-61

Kwasniewska, K
(416) 336-4576

Lakes Research Branch; National Water Research Institute; Environment Canada

**Role of yeast and fungi on contaminant fate**

To characterize and describe the new species from MODLES. To conduct contaminant degradation experiments with predominant yeasts and fungi from MODLES. To investigate importance of yeast/fungi in degradation of pulp mill related high molecular weight chlorinated organics.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$355 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1994 03*

## 0602-62

Laing, J
(519) 824-4120

Department of Environment Biology; University of Guelph

**Introduction of Holcothorax testaceipes for the biological control of spotted tentiform leafminer**

To continue experimental releases of the parasite and evaluate its effectiveness and tolerance to pesticides.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$7 850

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 02*

## 0602-63

Law, F
(604) 291-4292

Simon Fraser University

**Studies on the bioavailabilities and toxicokinetics of pyrene carbazole in trout**

none available

Financing/*Financement:* National Science & Engineering Research Council

$30 720

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 03*

## 0602-64

Leduy, A
(418) 656-2634

Université Laval; Département de génie chimique

**Production de méthane par la digestion anaérobie des tiges de sorgho.**

Production de biogaz par la digestion anaérobie des tiges de sorgho à grain (Sorghum bicolor) provenant de la République du Mali (Afrique). Ce projet est réalisé sous contexte africain en vue d'une application réelle en Afrique dans le recyclage des déchets agricoles (actuellement en abondance) en énergie (actuellement en pénurie).

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$30 000
**START/*DÉBUT*:** *1985* **END/FIN:** *1987 12*

## 0602-65

Legge, A
(403) 220-5271
Kananaskis Centre for Environmental Research; University of Calgary

**The effects of nitrogen oxides on native vegetation near compressor installations in Alberta**

The main overall objectives of this research project were to determine the sensitivity of selected plants species to injury by low concentrations of NO and/or NO2 and to determine whether selected plant species will acclimate to low concentrations of NO and/or NO2 stress.

Financing/*Financement:* Alberta Environment
$542 845
**START/*DÉBUT*:** *1980 04* **END/FIN:** *1985 03*

## 0602-66

Lo, S-N
(819) 376-5075
Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Traitement biologique des effluents de pâtes TMP et TCMP.**

Evaluer les performances du traitement biologique par voie aérobie des effluents de la fabrication des pâtes TMP et TCMP. Déterminer les conditions optimales d'opération et la réduction des polluants conventionnels et toxiques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
**START/*DÉBUT*:** *1989 09* **END/FIN:** *1992 12*

## 0602-67

Luciani, A
(416) 227-5562
IPMCC

**Mating disruption as an alternative management strategy for the gypsy moth**

Test the efficacy of non-chemical alternatives (Luretape GM, scraping and destroying egg masses and burlap trapping) in Southern Ontario urban/suburban and rural forest environments. Evaluate the suitability, practicallity and economics of non-chemical alternatives.

Financing/*Financement:* Ontario Pesticides Advisory Committee
$15 000
**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0602-68

Lush, D
(416) 458-4044
Beak Consultants Ltd.

**Review and evaluation of the applicability and ecological risk assessment approaches and procedures for new products of biotechnology**

Definition of biotechnology product classes. Evaluation of ecological risk assessment approaches. Research strategy recommendations. Final report by July 6, 1988.

Financing/*Financement:* Dept. of Supply and Services Canada
Ministry of State for Science and Technology
Environment Canada, Conservation and Protection
$25 000
**START/*DÉBUT*:** *1988 01* **END/FIN:** *1988 07*

## 0602-69

MacDonald, D
(416) 977-2410
Canadian Environmental Law Research Foundation

**Biotechnology and The Resource Sector: The Need for Policy Development**

1. Identify activities and organizations in Canada which are involved in the development and/or application of organisms genetically altered by recombinant DNA techniques. 2. Identify, quantify and priorize potential environmental/health effects associated with the release of these organisms. 3. Determine policy issues and approaches for regulating the development and use of these organisms.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$48 000
**START/*DÉBUT*:** *1986 07* **END/FIN:** *1986 12*

## 0602-70

Mackauer, J
(604) 291-4292
Simon Fraser University

**Quantitative assessment of biological control agents and procedures**

none available

Financing/*Financement:* National Science & Engineering Research Council
$145 500
**START/*DÉBUT*:** *1983*

## 0602-71

Mallory, G
(416) 361-0794
BP Resources Canada Ltd.; Mining Divison

**Ecological engineering and biological polishing methods and assessment towards controlling contaminants from an abandoned base metal mine**

To assess the feasibility & effectiveness of various ecological engineering methods to control surface and subsurface water movements, and enhance biological polishing of metal contaminants, at the abandoned South Bay copper/zinc mine in Northern Ontario. Monitoring continues to 1992.

Financing/*Financement:* British Petroleum Resources Canada Limited
**START/*DÉBUT*:** *1986 04* **END/FIN:** *1989 12*

## 0602-72

McLeod, D
(519) 679-4452

University of Western Ontario

**Evaluation of alternative methods of pest control for the home garden**

In 1987, 1988, research was conducted to assess the effectiveness of an insect predator Aleochara bilineata for control of root maggot in home gardens, in onion sets, bunching onions, cabbages and radishes. Cabbage maggot, but not onion maggot was controlled, but at a cost of $7.50/wk/garden. In 1989 work will proceed on the use of light weight fabric floating row covers, the effect of mass trapping crucifer pests and the use of Aleochara bilineata.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 700

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0602-73

McLeod, D
(519) 679-4452

University of Western Ontario

**Assessment of the potential of Aleochara bilineata for control of root maggots in the home garden**

To assess the effectiveness of an insect predator for control of root maggot in home gardens; and estimate the relative abundance of parasites and predators in the home garden environment.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$14 700

**START/*DÉBUT***: *1987 03* ***END/FIN***: *1988 02*

## 0602-74

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treating wastewaters from upgrading processes**

Assess appropriate pollution abatement technologies or waste management practices for emissions from the CANMET coal co-processor technology. This project has been terminated.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$1 695 200

**START/*DÉBUT***: *1983 04* ***END/FIN***: *1988 03*

## 0602-75

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Fate of trace contaminants in biological treatment systems**

To determine the manner in which biological wastewater treatment systems dispose of toxic trace contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$412 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1989 04*

## 0602-76

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Biological methods for toxic chemical degradation**

Assess the capability of novel biological reactor systems to remove toxic trace contaminants. This project has been terminated.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Ontario Ministry of Environment

$690 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0602-77

Melkic, A
(519) 822-2608

Integrated Explorations

**Development of a Standard Clam Biomonitoring Methodology for the Detection of Trace Contaminants**

1. Assess the adequacy of supplies of uncontaminated clams. 2. Seek sources of alternative species from varied environments within the waters of the Ontario Great Lakes Region.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$51 500

**START/*DÉBUT***: *1986 05*

## 0602-78

Nalewajko, C
Ewing, C
(416) 284-3218

Life Sciences Division; University of Toronto

**Bioassessment of Contaminated Sediments**

To develop simple, but sensitive bioassays for the assessment and prediction of the impact of sediment on open water primary contaminant producers and bacteria.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$11 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 05*

## 0602-79

Nealis, V
(705) 949-9461

Great Lakes Forestry Centre

**Improving the biological control potential for gypsy moth in Ontario through the introduction of new species and strains of parasitoids based on their susceptibility to hyperparasitism**

To assess the impact of hyperparasitism on field populations of the gypsy moth parasitoid, Cotesia melanoscela. To maintain colonies of the biological control candidates and the principal hyperparasitoids for experimental trials. To examine the relative susceptivility of new biological control candidates to hyperparasitism in order to assess their likely effectiveness for biological control in Ontario.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$25 000

**START/*DÉBUT***: *1989 04*

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## 0602-80

Nealis, V
(705) 949-9461
Sault College of Applied Arts and Technology

**The role of parasitoids in the collapse of jack pine budworm populations**

Carry out a detailed analysis of existing data to examine the relationship between parasitism and jack pine budworm cycles, leading to improvements in the ability to forecast expected defoliation from larval sampling.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$10 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1988 04*

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## 0602-81

Oloffs, P
(604) 291-4292
Simon Fraser University

**Behaviour of selected pesticides and pesticide formulations under field and lab conditions**

Behaviour includes effects, persistence, translocation and transformation.

Financing/*Financement:* National Science & Engineering Research Council

$15 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1986 03*

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## 0602-82

Paquet, M
(418) 545-5292
Université du Québec à Chicoutimi; Dep. des sciences appliquées

**Développement d'un procédé de traitement anaérobie d'eaux résiduaires de fabriques de pâte thermomécanique.**

L'objectif global de ce projet de recherche est de démontrer, à l'échelle laboratoire, qu'un réacteur à film bactérien fixé sur un support interne mobile (lit fluidisé) peut être utilisé avantageusement pour traiter de façon anaérobie les eaux résiduaires d'une fabrique de pâte thermomécanique. Les objectifs spécifiques qui se rapportent aux principales étapes du projet sont les suivants: caractérisation chimique de l'effluent par groupes ou familles de composés en accordant une attention particulière aux substances reconnues pour être toxiques, développement d'un consortium bactérien adapté à cet effluent et capable de dégrader les substances toxiques, détermination des paramètres cinétiques de la biodégradation de l'effluent, développement d'un procédé à l'échelle laboratoire.

Financing/*Financement:* Université du Québec, Programme de développement académique du réseau

$12 000

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## 0602-83

Petras, M
(519) 253-4232
Department of Biology; University of Windsor

**Monitoring Environmental Genotoxicity Using Sister Chromatid Exchanges in Mice**

To continue evaluating the feasibility of using sister chromatid exchanges (SCE) in both wild and inbred (laboratory) mice as a first-line monitoring system for environmental genotoxicity. Such a system could use either animals that are already in place (natural pollution) or mice that are placed in corn-filled containers at sites to be monitored.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$127 900

**START/*DÉBUT***: *1985 07* **END/*FIN***: *1988 01*

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## 0602-84

Picard, G
(418) 656-2710
Université Laval; Dép.des sciences et de la technologie des aliments

**Utilisation de l'azote inorganique par les algues unicellulaires**

Lutter contre la pollution des eaux usées (domestiques-agricoles-industrielles) par un recyclage biologique (production de biomasse) par l'intermédiaire de l'énergie solaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$25 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1990 05*

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## 0602-85

Pouliot, Y
(418) 692-1357
Bionov CNP Inc

**Bilan et perspectives des biotechnologies environnementales au Québec (Etude).**

Tracer le portrait du domaine des biotechnologies environnementales au Québec; faire ressortir les points faibles; identifier les secteurs à fort potentiel de développement. Rapport disponible: oui

Financing/*Financement:* Canada, ministère de l'Environnnment

Centre québécois de valorisation de la biomasse

Québec, ministère de l'Environnement

$21 000
**START/*DÉBUT***: *1986 07* ***END/FIN***: *1987 03*

## 0602-86

Pouliot, Y
(418) 692-1357
Bionov CNP Inc

**Traitement et valorisation des eaux usées par culture de microalgues**

Optimisation du procédé en laboratoire et en installation-pilote, sélection de souches de microalgues performantes. Rapport disponible: oui

Financing/*Financement:* Fonds institutionnel de recherche
$15 000

## 0602-87

Rainnie, D
(306) 966-7442
University of Saskatchewan

**Criteria for the deliberate release of genetically engineered organisms**

Final report available

Financing/*Financement:* Environment Canada, Conservation and Protection
$19 000
**START/*DÉBUT***: *1987 01* ***END/FIN***: *1987 03*

## 0602-88

Rollin, A
(514) 340-4922
Chemical Engineering; Ecole Polytechnique

**Développement d'un nouveau système de fosse septique incorporant des géosynthétiques**

A incorporer des géotextiles et des géodrains à la fois au niveau d'un noveau type de bioréacteur anaérobic et dans le champ d'épuration des effluents.

Financing/*Financement:* Environment Canada, Conservation and Protection
Societe québécoise d'assainissement des eaux
Hydro Québec
Texel Inc.
Les Réservoirs Granby Inc.
$297 000
**START/*DÉBUT***: *1988 12* ***END/FIN***: *1991 12*

## 0602-89

Rollin, A
(514) 340-4922
Chemical Engineering; Ecole Polytechnique

**Study of the relationship between biofilm development and geotextile structures**

To study biofilm development on synthetic textiles (geotextiles) leading to the design of proper cloth media in the treatment and disposal of domestic wastewater onsite. Final report unpublished (precompetitive research protected), 'Study of the Relationship Between Biofilm Development and Geotextile Structures', A. Rollin and H. Brisson, Chemical Engineering Dept., Ecole Polytechnique de Montréal.

Financing/*Financement:* Environment Canada, Conservation & Protection
$23 635
**START/*DÉBUT***: *1988 01* ***END/FIN***: *1988 10*

## 0602-90

Sears, M
(519) 824-4120
University of Guelph; Dept. of Environmental Biology

**Impact of natural enemies on populations of Colorado potato beetles in potatoes**

To record the effect of all natural enemies on populations of CPB in small field plots and create a life table of the mortality factors. To develop rearing procedures for C. maculata, P. maculiventris, and P. bioculatus. To determine the effect of C. maculata, P. maculiventris, and P. bioculatus on populations of CPB in field cages and small field plots. To determine the effects of B.t. tenebrionis on the survival, prey feeding, fecundity of C. maculata and P. maculiventris.

Financing/*Financement:* Ontario Pesticides Advisory Committee
$11 700
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0602-91

Sérodes, J
(418) 656-2868
Université Laval; Département de génie civil

**Traitement tertiaire des eaux usées par microalgues.**

Enlèvement des éléments nutritifs (N.P.) des effluents secondaires par biotechnologie solaire. Enlèvement de l'azote par strippage avec biocontrôle du PH par des microalgues. Production de biomasse d'algues.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
Fonds pour la formation des chercheurs et l'aide à la recherche
$300 000
**START/*DÉBUT***: *1980*

## 0602-92

Sérodes, J
de la Noüe, J
(418) 656-2868
Groupe de recherche en recyclage biologique et aquiculture (GREREBA)

**Valorisation et traitement d'effluents par biotechnologie solaire**

Mettre au point des systèmes de traitement tertiaire par recyclage biologique. Accroître nos connaissances en biotechnologie solaire, en particulier sur la physiologie des microalgues; concevoir, réaliser, opérer et optimiser des systèmes biotechnologiques solaires (culture de chlorophycées et de cyanobactéries pour l'épuration d'effluents polluants; évaluer l'intérêt des biomasses produites pour fins

d'alimentation animale ou d'extraction de produits spécifiques.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$100 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1990 05*

## 0602-93

Smith, S
(416) 978-5482

University of Toronto; Faculty of Forestry

**Potential for using egg parasitoids such as Trichogramma for biological control of forest tent caterpillar**

The purpose of this research is to investigate and assess the potential for using egg parasitoids such as Trichogramma to prevent or suppress epidemic populations of Forest Tent Caterpillar. This will be accomplished through field and laboratory studies designed to: Determine FTC egg availability. Examine Trichogramma species complex and distribution. Assess temporal acceptibility of FTC eggs to parasitism by Trichogramma.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 650

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1991 03*

## 0602-94

Smoragiewicz, W
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Biodégradation des boues flottantes des abattoirs et valorisation des boues stabilisées obtenues.**

Les résultats préliminaires de fermentation des boues flottantes d'un abattoir ont été très prometteurs. Nous obtenons un résidu qui correspond à une forte diminution de volume, et à l'apparence de 'cake argileux' dont le taux des lipides est très bas. Ce procédé pourrait être très rapidement appliqué aux abattoirs en butte à des problèmes urgents de disposition des boues. De plus, nous pourrions étudier des possibilités de valorisation (autres que leur envoi aux fondoirs) des boues stabilisées.

Financing/*Financement:* Québec, ministère de l'Environnement

Association des abattoirs avicoles du Québec

$50 343

**START/*DÉBUT*:** *1988 03* **END/FIN:** *1988 12*

## 0602-95

Smoragiewicz, W
Dubeau, H
(514) 282-3922

Université du Québec à Montréal; Département des sciences biologiques

**Développement d'un procédé visant à améliorer la gestion des boues résiduaires des stations d'épuration des eaux usées.**

L'objectif général de ce projet de recherche est de diminuer la charge organique des boues résiduaires des stations d'épuration des eaux usées tout en augmentant la quantité de biogaz produite par fermentation méthanogénique, et ce faisant appel à la biotechnologie.

Financing/*Financement:* Fonds institutionnel de recherche

$15 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988*

## 0602-96

St-Arnaud, S
(514) 689-4117

Institut Armand-Frappier; Centre de recherche microbiologie appliquée

**Etude de certains aspects microbiologiques de la nitrosation du lisier de porc**

La forte teneur en azote du lisier de porc est une des principales causes de la pollution engendrée par ce déchet. Il est connu que la nitrification biologique suivie d'une dénitrification est une façon intéressante pour éliminer ou réduire les composés azotés. Afin d'optimiser un traitement biologique nous avons cherché à mieux connaître les nitrobactéries et leur comportement sous les conditions difficiles rencontrées avec le lisier de porc. Nous avons premièrement tenté d'isoler en culture pure les nitrobactéries du lisier de porc. Nous avons complété la première étape d'une étude portant sur l'utilisation d'un appareil à biodisques pour transformer le NH4+ en NO2-. Nous avons déterminé le comportement de Nitrosomonas europea en anaérobiose et de l'oxydation de la matière organique.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$7 500

## 0602-97

Stokes, P
(416) 978-6526

University of Toronto; Institute for Environmental Studies

**Partial support of a collection of algal, microbial and plant cell cultures**

To develop and maintain a research collection of microorganisms (algae, cyanobacteria, selected bacteria) and higher plant cells which will be used extensively in research on environmental science, environmental engineering, algal physiology and ecology and plant biotechology (including algae and higher plants). To provide a resource centre for plasmid vectors and plasmid-borne clone banks constructed from photosynthetic organisms and gene-specific cloned DNA to used as probes. To create and implement an information network for researchers to provide computer access to this collection and link with other culture collections.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$36 000

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 01*

## 0602-98

Surgeoner, G
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Evaluation of Muscovy ducks as adjuncts to sanitation for control of the house fly, Musca domesticus L.**

In dairy operation (calf room) and swine operation, Muscovy ducks will be used to control flies. As well in the dairy, 4 pens of pregnant cows will be used : 2 with ducks and 2 controls. At a beef feedlot cow/duck interaction and duck territorial behaviour (when unconfined) will be monitored. At local horse stables, ducks will be released and monitored for producer acceptance. Compare efficacy of males vs. females (4 cages), counting flies remaining at 1 hr., 2 hrs., and 4 hrs. Video photography will be used at several facilities.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$21 800

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 04*

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## 0602-99

Surgeoner, G
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Elimination of insecticide resistent house fly population by sanitation and susceptible fly release**

To continue sanitation programs on a dairy farm and swine facility to show efficacy and economic return of sanitation for house fly control. Releasing of susceptible flies and monitoring resistance to permethrin and dichlorvos in fly population in Davies' barn.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$32 283

**START/*DÉBUT***: *1987 03*

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## 0602-100

Sutton, J
(519) 824-4120

University of Guelph; Dept. of Environmental Biology

**Biological control of grey mold in strawberries**

In 1987-88, 80 potential natural biocontrol organisms for grey mold on strawberries were isolated; these included yeasts, mycelial fungi and bacteria. Each suppressed B. cinerea on the flowers and fruit but none on the leaves. In 1989-90 it is proposed to continue work from 1988-89 to examine the effectiveness of these organisms for B.c. biocontrol, examine the effect of simple nutrients on natural and applied biocontrol agents, examine the role of weather on biocontrol, examine optimum timing and integrate biocontrol with chemical control. Research is expected to continue for 2 more years.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$49 700

**START/*DÉBUT***: *1987 00*

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## 0602-101

Sutton, J
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Biological control of strawberry and raspberry diseases**

To monitor populations of saprotrophic and weakly parasitic fungi and bacteria on strawberries and raspberries and determine temporal relationship with pathogens of B. cinerea and Zythia sp. Isolate same and assess impact of chlorothalonil and dodine on these antagonistic organisms.

Financing/*Financement:* Ontario Ministry of the Environment, Ontario Pesticides Advisory Committee

$13 200

**START/*DÉBUT***: *1937 03* **END/*FIN***: *1988 02*

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## 0602-102

Thibault, J
(418) 656-5927

Université Laval; Centre de recherche en biologie forestière

**Répression biologique (allélopathique) du framboisier sur les terres forestières exploitées.**

1) Comprendre les modalités d'interférence allélopathique engendrée par les framboisiers suite aux opérations de reforestation. 2) Mettre au point un mycoherbicide spécifique au framboisier comme alternative aux méthodes traditionnelles de lutte chimique via herbicides. 3) Etude de la possibilité de produire des semis conifériens résistants aux exsudats allélopathiques des framboisiers.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$180 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 03*

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## 0602-103

Thibodeau, P
(418) 643-2348

Mapaq; Service de recherche en phytotechnie de Québec

**Evaluation de la résistance du Botrytis cinerea aux fongicides; mise au point d'une méthode rapide et efficace de détection de la résistance aux fongicides.**

Développer une méthode de détection de la résistance de B.cinerea afin de prévenir ou de stopper le développement de souches résitantes et de permettre une utilisation plus rationnelle des fongicides, ce qui permettrait de développer des stratégies de lutte intégrée contre les ennemis des cultures et de développer des moyens pour prévenir et réduire la pollution (aliments, eau, sol).

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

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## 0602-104

Thibodeau, P
(418) 643-2348

Mapaq; Service de recherche en phytotechnie de Québec

**Amélioration génétique de la résistance de la tomate de serre à la pourriture fusarienne.**

Développer des variétés de tomates de serre résistantes à la pourriture fusarienne et aux virus (TOMV) et adaptées au Québec, ce qui aura pour effet de réduire le nombre de fumigations stérilisantes du sol et de diminuer le nombre de traitements fongicides: donc moins d'exposition des producteurs aux fumigeants et fongicides, moins de danger de pollution des aliments, eau, sol et personnes par fongicides.

Financing/*Financement:* Québec, ministère de l'Agriculture, des Pêcheries et de l'alimentation

## 0602-105

Trevors, J
(519) 824-4120
University of Guelph

**Use of laboratory microcosms to investigate genetic interaction between bacteria**

Final report dated March 14, 1988 available

Financing/*Financement:* Dept. of Supply and Services Canada

Environment Canada, Conservation and Protection

$45 000

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 03*

## 0602-106

Turgeon, J
(705) 949-9461

Forest Pest Management Institute

**Development of a coloured trap to detect and monitor the spruce cone maggot in black spruce seed orchards**

In preliminary screen tests conducted in 1988, colour traps were shown to hold promise as spruce adult samplers. In 1989 research is proposed to be conducted at Lake Bonner Tree Improvement Centre near Kapuskasking. Experimental design follows results obtained for European Larch Cone Maggot, where traps are located parallel to the ground.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$12 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0602-107

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Biotechnologies algales en Québec**

Utilité des algales pour dépollues aprés traitement primarie et/ou secondaire, pour diminuer l'entrophisation.

Financing/*Financement:* Environnement Canada, Conservation et protection

$5 000

**START/*DÉBUT***: *1988 05* **END/*FIN***: *1988 09*

## 0602-108

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Bilan et perspectives des biotechnologies environnementales au Québec**

Forus et faiblisses en biotraitabilité des effluents, biodegradation des toxiques, biopesticides, compostage au Québec.

Financing/*Financement:* Environnement Canada, Conservation et protection

Ministère de l'environnement du Québec

Centre Québécois valorisation biomasse

$25 000

**START/*DÉBUT***: *1986 02* **END/*FIN***: *1988 04*

## 0602-109

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Les biotechnologies au Québec: un milieu en effervescence**

Potential du Québec pour biotechnologies biomédicales, agroalimentaires, forestières et environnementales à faire valoir dans le monde.

Financing/*Financement:* Ministère de l'industrie, science et technologie Québec

National Research Council, Institut recherche biotechnologie

Environnement Canada, Conservation et protection

$91 000

**START/*DÉBUT***: *1987 09* **END/*FIN***: *1988 06*

## 0602-110

Varma, R
(403) 632-6761

Alberta Environmental Centre

**Survey and screening of plant pathogens as biological control agents for weeds**

To assess the pathogenicity caused to their respective host plants by infection with a range of fungi isolated from diseased weeds. To evaluate the host specificity of these pathogens by inoculation tests with a range of crop and other non-target plants. To continue screening of materials submitted under the 'Weed Disease Watch' program and identify further potential mycoherbicides. To make selected pathogens available for commercial development as mycoherbicides.

Financing/*Financement:* Alberta Environmental Centre

Farming for the Future, Alberta Agriculture

**START/*DÉBUT***: *1988 04*

## 0602-111

Vermot-DesRoches, B
(819) 376-5080

Université du Québec à Trois-Rivières; Dep. administration et économie

**Facteurs de succès pour la valorisation de la biomasse au Québec**

Financing/*Financement:* Centre québécois de valorisation de la biomasse

$25 000

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1987 06*

## 0602-112

Webster, J
(604) 291-4292

Simon Fraser University

**Testing of bursaphelenchus DNA probes against different population forms of pinewood nematode**

To test two bursaphelenchus probes.

Financing/*Financement:* Science and Professional Services

## 0602-113

Webster, J
(604) 291-4292
Simon Fraser University

**Commercialization of entomogenous nematodes to control certain insects in agriculture and forestry**

To commercially develop entomogenous nematodes to control certain pests of agriculture and forest nursery crops in B.C.

Financing/*Financement:* Science Council of British Columbia

Phero Tech Inc.

## 0602-114

Webster, J
(604) 291-4292
Simon Fraser University

**Improved commercial production of nematodes for the control of insect pests**

To provide consistent nematode bacterial virulence; improve production process control; produce consistently high yield in vitro culture; and improve nematode storage without loss of virulence.

Financing/*Financement:* National Science & Engineering Research Council

Phero Tech Inc.

$243 480

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0602-115

Willes, R
Orr, J
(416) 845-3872
Cantox Inc.

**Preliminary assessment of potential environmental hazards of biotechnology products and wastes**

Final report dated April 13, 1987 available.

Financing/*Financement:* Environment Canada, Conservation and Protection

$5 000

**START/*DÉBUT***: *1987 01* **END/*FIN***: *1987 04*

## 0602-116

Winston, M
(604) 291-4292
Simon Fraser University

**Pesticide resistance mechanisms in a beneficial pollinating insect**

To rapidly assay the impact of new pesticides and formulations on pollinators.

Financing/*Financement:* National Science & Engineering Research Council

**START/*DÉBUT***: *1981*

## 0602-117

Wolfe, S
(613) 547-6658
Department of Chemistry; Queen's University

**A Chromogenic Reagent for the Detection of E. Coli**

This new bacteriological technique has involved co-operation between Dr. Wolfe and microbiology staff of Southeastern Region - may constitute a breakthrough in bacteriological testing due to its high degree of specificity for E. Coli.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$22 100

**START/*DÉBUT***: *1986 11* **END/*FIN***: *1987 12*

## 0602-118

Wyatt, G
(613) 545-6120
Queen's University; Biology Department

**Insect biotechnology and agriculture**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$12 211

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1989 07*

## 0602-119

Zaloum, R
(514) 283-4252
Centre Saint-Laurent; Environnement Canada

**Le traitement des effluents d'une usine de pâtes et papier (TMP) par filtre biologique aéré**

Investigate whether aerated biofiltration is applicable to treatment of TMP pulp and paper effluents.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

MENVIQ

Kruger Paper Company

John Muenier Inc.

$497 000

**START/*DÉBUT***: *1988 09* **END/*FIN***: *1990 04*

## 0603-1

Austin, A
Lucey, W
(604) 721-8852

University of Victoria

**Productivity of periphyton communities, their biochemical and nutritional status in aquatic systems**

Enhancement and control of growth and productivity for use as feedstock in aquaculture system. Assessment of nutritive value of periphyton biomass, by feed trials, to determine efficacy for use in specialized diets. Publications expected spring of 1988.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

National Science & Engineering Research Council

Science Council of British Columbia

$90 000

**START/*DÉBUT***: *1986 05*

## 0603-2

Beech, F
(604) 666-2165

Environment Canada; Conservation and Protection; Environmental Protection

**Develop methodology to analyse the sensitivity of the Thompson River drainage to chemical spills**

To determine methods of assessing environmental impact of chemical spills through analysis of dispersion of various chemicals, their toxicity to aquatic organisms and development of countermeasures. Report and computer model available from F. Beech at above address.

Financing/*Financement:* Department of Supply and Services Canada

Federal Environmental Assessment Review Office

Environment Canada, Conservation and Protection

$139 000

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1987 03*

## 0603-3

Beltaos, S
(416) 336-4898

Rivers Research Branch; National Water Research Institute; Environment Canada

**Ice jams and floods**

To develop new knowledge on ice jamming processes and build predictive models for improved ice management capabilities.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 020 000

**START/*DÉBUT***: *1979 07* **END/*FIN***: *1991 07*

## 0603-4

Bobra, A
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Testing of new spill monitors**

Laboratory testing will be conducted on new monitors developed by private industry.

Financing/*Financement:* Environment Canada, Conservation and Protection

$5 000

**START/*DÉBUT***: *1987 03* **END/*FIN***: *1990 03*

## 0603-5

Bobra, A
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Near-surface air sampler for spilled chemicals**

To develop an extreme emergency remote controlled air sampler. First prototype completed and has been retested and improved.

Financing/*Financement:* Environment Canada, Conservation and Protection

$50 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1987 03*

## 0603-6

Bobra, A
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Prototype mobile field analytical system**

To develop a mobile field analytical system (vehicle portable) which would be capable of identifying and quantifying hazardous chemicals at spill sites. A mobile system was completed, system is now being expanded and modernized.

Financing/*Financement:* Environment Canada, Conservation and Protection

$280 000

**START/*DÉBUT***: *1981 04* **END/*FIN***: *1990 03*

## 0603-7

Bobra, A
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Development of person portable analytical system**

To develop a person portable analytical system for use at spill scenes. A system was completed and is now being expanded for chemicals in soil and water.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT*:** *1981 04* **END/FIN:** *1990 03*

## 0603-8

Coppock, R
Khan, A
(403) 632-6761

Alberta Environmental Centre

**Toxicology services**

To provide information and field investigation services to government agencies and industry, in toxicology.

Financing/*Financement:* Alberta Environmental Centre

$10 000

**START/*DÉBUT*:** *1984 07*

## 0603-9

Dionne, J-C
(418) 656-5879

Université Laval; Centre d'études nordiques

**Evolution des rives du Saint-Laurent: érosion et sédimentation**

Mettre en évidence les zones subissant de l'érosion; connaître les mécanismes et les causes de l'érosion; déterminer les processus et le taux de sédimentation sur les rivages; obtenir une connaissance adéquate des rivages en vue de leur protection et d'une saine gestion et utilisation.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

**START/*DÉBUT*:** *1982*

## 0603-10

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Environmental effects of oil spill combustion**

Controlled burns will be used to determine the effects of oil spill combustion on the environment by measurement of the products formed. The work is being conducted by the U.S. National Bureau of Standards.

Financing/*Financement:* Minerals Management Service, U.S. Dept. of the Interior

Environment Canada, Conservation and Protection

$170 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1990 03*

## 0603-11

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Photooxidation and long-term oil weathering**

To assess the long-term weathering of oil in the environment including processes such as photooxidation and dissolution.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

$300 000

**START/*DÉBUT*:** *1987 06* **END/FIN:** *1991 06*

## 0603-12

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Fate of oil in snow**

The objective is to determine the fate of spilled oil in snow and then develop a model to predict that fate.

Financing/*Financement:* Northern Oil and Gas Action Program

$49 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 03*

## 0603-13

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Development of treating agent guidelines**

The project will result in the development of guidelines for the acceptability and use of many different types of treating agents. Also being developed are methods to test effectiveness and toxicity.

Financing/*Financement:* Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1990 03*

## 0603-14

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Update of the hazardous material spill manual**

To complete a new version of the popular 'Manual for Hazardous Material Spills' to include 50% more information and twice as many chemicals.

Financing/*Financement:* Environment Canada, Conservation and Protection

$200 000

**START/*DÉBUT*:** *1985 03* **END/FIN:** *1991 03*

## 0603-15

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**A study of the solubility of mixtures**

To develop a standard protocol for the measurement of mixture solubility, measure a number of solubilities and provide a model which correlates solubilities.

Financing/*Financement:* Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1989 03*

## 0603-16

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**ESRF simple remote sensor project**

To develop a simple system involving cameras for the detection of oil spills. Awaiting report from contractor.

Financing/*Financement:* Imperial Oil Company

Environmental Studies Revolving Fund

Environment Canada, Conservation and Protection

$320 000

**START/*DÉBUT*:** *1984 11* **END/FIN:** *1987 06*

## 0603-17

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**NOGAP study of oil in freezing situations**

To study the behaviour of oil in freezing situations. First two studies completed and published.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$160 000

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1988 06*

## 0603-18

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Fluorosensor development**

To develop a system (fluorosensor) to detect submerged oil and identify surface oil.

Financing/*Financement:* Department of Supply & Services Canada

Department of Fisheries & Oceans Canada

Environment Canada, Conservation and Protection

$997 663

**START/*DÉBUT*:** *1989 04* **END/FIN:** *ongoing*

## 0603-19

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**OILSPILLS and a rig-mounted remote sensor**

To develop a system to monitor continuously for oil pollution using a rig-mounted remote sensor. Project completed and a report was prepared.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT*:** *1984 06* **END/FIN:** *1987 06*

## 0603-20

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**EnviroTIPS manual on PCBs**

To produce a manual in the TIPS format for PCBs. Draft manual now requires rewriting.

Financing/*Financement:* Environment Canada, Conservation and Protection

$150 000

**START/*DÉBUT*:** *1985 06* **END/FIN:** *1989 06*

## 0603-21

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**New dispersants**

To test the effectiveness and toxicity of new dispersants, to see if they comply with the dispersant guidelines and could be approved for use in the environment. This is an annual regulatory project.

Financing/*Financement:* Environment Canada, Conservation and Protection

$405 000

**START/*DÉBUT*:** *1973 03* **END/FIN:** *ongoing*

## 0603-22

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Laboratory testing of elastol**

To test the operability of the new oil spill treating agent Elastol which renders oil visco-elastic and thus aids in its recovery.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

$80 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 03*

## 0603-23

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Study of heavy and sunken oils**

A long term study of the fate and behaviour of heavy and submerged oils.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

$100 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1990 03*

## 0603-24

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Chemical spills in the Thompson River.**

To provide: 1) a model of the Thompson River, 2) a computer simulation of a chemical spill in the Thompson River. Project completed, report and model are available.

Financing/*Financement:* Environment Canada, Conservation and Protection

Environmental Assessment Review Panel

Department of Supply and Services Canada

$120 000

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1987 09*

## 0603-25

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Short-term toxicity testing**

To study the effects of chemicals (short-term toxicity) which can be spilled from a single source into a river or a large lake. Some data has been published and more will be published in March 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

$110 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 04*

## 0603-26

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Manual on the basics of chemical spills**

To produce a manual on the basics of chemical spills. Draft technical version is now under review and requires rewriting.

Financing/*Financement:* Environment Canada, Conservation and Protection

$60 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1991 03*

## 0603-27

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Behaviour of oil and gas exiting a seabed blowout**

To study the behaviour of oil and gas in a seabed blowout. Study in progress.

Financing/*Financement:* Environment Canada, Conservation and Protection

$20 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 04*

## 0603-28

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Detection of oil under ice**

To provide remote sensing capability of oil under ice. A working prototype was developed and several reports are published. Unit now requires commercialization.

Financing/*Financement:* ESSO Resources Canada

Environment Canada, Conservation and Protection

$600 000

**START/*DÉBUT*:** *1981 06* **END/FIN:** *1991 03*

## 0603-29

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Oil properties catalogue**

To provide a catalogue of physical/chemical properties of crude oils and their products which are found in or imported to Canada. Third version has been published.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

$15 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1991 03*

## 0603-30

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**U.S. Marine Board review of dispersant use**

To review the literature on dispersants use extensively and to conclude if dispersants are useful in oil spills. Draft ver-

sion now being reviewed.

Financing/*Financement:* United States Coast Guard
Environment Canada, Conservation and Protection
Minerals Management Service, U.S. Dept. of the Interior
United States Environmental Protection Agency
$250 000

**START/*DÉBUT*:** *1985 11* **END/*FIN*:** *1988 04*

## 0603-31

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**ESRF Beaufort Sea dispersant trials**

Large scale sea trial on studying the effect of dispersants on crude oil spills in the Beaufort Sea. Test was completed in 1986.

Financing/*Financement:* Petro Canada
Environmental Studies Revolving Fund
Environment Canada, Conservation and Protection
Gulf Canada Corp.
Petroleum Association for Conservation of Canadian Environment
$570 000

**START/*DÉBUT*:** *1985 11* **END/*FIN*:** *1987 02*

## 0603-32

Fingas, M
(613) 998-9622

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**ESRF oil-in-pack ice experiment**

To study the behaviour of oil-in-pack ice in a field study. Test was completed and a report published.

Financing/*Financement:* Environmental Studies Revolving Fund
Environment Canada, Conservation and Protection
$160 000

**START/*DÉBUT*:** *1985 08* **END/*FIN*:** *1987 08*

## 0603-33

Gowda, H
Palmer, M
(416) 485-7715

Gore & Storrie Limited

**Ottawa River Nuclear Spill Contingency Model Development - Phase II**

To interface 1-D model algorithms with TWODIFIN model; to develop algorithms for special distributions at specified times; to carry out model validation studies; to optimize process parameters; to incorporate a user-specified graphical package; to develop algorithms for interactive model of execution, and to familarize MOE staff on model operation aspects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$40 000

**START/*DÉBUT*:** *1986 04* **END/*FIN*:** *1986 12*

## 0603-34

Guidotti, T
(403) 492-6291

University of Alberta; Faculty of Medicine; Occupational Health Program

**Impact on a community of misperceived cancer risk**

1. To determine impact on a community with a normal risk profile the effect of a false report that cancer incidence was elevated. 2. To minimize the effect of this mistake on the community. 3. To analyse implications for understanding behavioural changes in response to perceived threat. Preliminary report available.

Financing/*Financement:* Alberta Community and Occupational Health

## 0603-35

Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Technology assessment and development for petroleum product storage, OILSPILLS pipeline leak sensor**

Development of an airborne remote pipeline oil leak sensing device. Interim reports are available from EPS NWT District Office in Yellowknife.

Financing/*Financement:* Panel on Energy Research and Development
$375 000

**START/*DÉBUT*:** *1983 09* **END/*FIN*:** *1987 03*

## 0603-36

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Investigation of mobile chemical spill treatment technologies on a contaminated landfill**

Technologies including microfiltration, reverse osmosis, enhanced oxidation, steam stripping and butane stripping will be tested in series and alone for their applicability on treatment of contaminated water.

Financing/*Financement:* Environment Canada, Conservation & Protection
$60 000

**START/*DÉBUT*:** *1990 04* **END/*FIN*:** *1990 06*

## 0603-37

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Development of a mobile water decontamination facility based on rayox enhanced oxidation technology**

Design and construction of a mobile chemical spill treatment unit capable of destroying organic compounds.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

$179 000

**START/*DÉBUT*:** *1988 12* **END/FIN:** *1990 11*

## 0603-38

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Pervaporation as an environmental emergency countermeasure**

To investigate pervaporation for spill and leachate amelioration. Laboratory scale studies were followed by the design and construction of a mobile prototype and additional work is being performed to fine tune the unit.

Financing/*Financement:* Environment Canada, Conservation & Protection

$180 000

**START/*DÉBUT*:** *1987 10* **END/FIN:** *1990 03*

## 0603-39

Lau, L
(416) 336-4897

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant/sediment transport in river flows**

Investigate the interactions between river flows and the processes of contaminant and sediment transport and transformation and develop modelling capabilities for these processes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1997 03*

## 0603-40

Logan, D
(416) 736-2100

Department of Biology; York University

**The Use of Various Bacterial Short-Term Tests to Screen Industrial Effluents for Mutagenic Activity**

To evaluate the suitability of the Fluctuation Assay for mutagenicity testing for various industrial sectors, to screen industrial aqueous effluents for mutagenic activity and to set the priority for such effluents, based on their mutagenic activity, for additional genotoxicity testing.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$12 000

**START/*DÉBUT*:** *1986 03* **END/FIN:** *1987 05*

## 0603-41

Major, D
(416) 671-2600

Beak Consultants Ltd.

**In situ biodegradation of chlorinated solvents as a remedial technology for contaminated groundwater**

To determine factors and processes governing in situ transformation and degradation of tetrachloroethylene in the groundwater at a chemical transfer facility, thereby furthering understanding of microbial processes at spill sites.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$80 000

**START/*DÉBUT*:** *1989 07* **END/FIN:** *1991 06*

## 0603-42

Morris, R
(416) 688-5550

Department of Biological Sciences; Brock University

**Experimental management of a common tern colony**

(1) To maintain and/or rehabilitate suitable nesting substrate. (2) To determine feasibility of manipulations to improve reproductive success of late nesting terns.

Financing/*Financement:* Ontario Ministry of Natural Resources

**START/*DÉBUT*:** *1986 05*

## 0603-43

Murthy, C
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**St. Lawrence River loadings and Lake Ontario/Niagara River toxics management**

To conduct physical limnological experiments (six Lagrangian drifter experiments, six current meter moorings, current profiles, etc.) at the main channels of St. Lawrence River and Kingston basin, Lake Ontario. Determine chemical loadings of selected toxic substances entering St. Lawrence River from Lake Ontario using IWD/Ontario Region chemical monitoring data. Analysis of Niagara River plume frontal effects in Lake Ontario - fate and pathways of toxics in Lake Ontario.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$1 100 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1996 04*

## 0603-44

Pelletier, E
(418) 724-1764

Université du Québec; INRS-océanologie

**Etude des effets du pétrole dispersé sous la glace en milieu marin.**

1. Etablir un bilan chimique du vieillissement du pétrole dispersé en eaux marines très froides et sous la glace. 2. Evaluer le choc toxique subi par l'écosystème pélagique lors

d'une dispersion chimique en hiver. 3. Evaluer la capacité de récupération de l'écosystème au printemps.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$270 000

**START/*DÉBUT*:** *1987 11* **END/FIN:** *1990 11*

## 0603-45

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Subsurface oil movement**

During a major east coast oil spill, oil was observed floating below the sea surface hampering the location & clean-up of the oil. To assess physical/chemical/oceanographic factors affecting oil submergence in order to be in a better position to predict such movement. Data from each year already published in EE-series. PERD No.67220.

Financing/*Financement:* Panel on Energy Research & Development

$200 000

**START/*DÉBUT*:** *1986 11* **END/FIN:** *1987 02*

## 0603-46

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Integrated hydrocarbon monitoring system**

As follow-up to offshore well blowout; the need for an integrated monitoring system was established. A contract is being let to develop a system of monitoring that has shown considerable promise. Report due March 1988.

Financing/*Financement:* Panel on Energy Research & Development

$150 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0603-47

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Remote sensing chronic oil discharges**

Develop equipment suitable for remotely sensing chronic & major spillage from offshore oil production facilities. Data for previous years studies published in EE report series. PERD No.67206.

Financing/*Financement:* Panel on Energy Research & Development

$245 000

**START/*DÉBUT*:** *1984 11* **END/FIN:** *1988 05*

## 0603-48

Percy, R
Doe, K
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Comparative toxicology of crude oils**

This study will use standard methods to compare many Canadian, and a few international oils in terms of their acute toxicity.

Financing/*Financement:* Arctic Marine Oilspill Program

$30 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1987 03*

## 0603-49

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Use of sorbents to remove insoluble sunken liquid chemicals from waterways**

Laboratory phase studies completed in house and very successful.

Financing/*Financement:* Environment Canada, Conservation and Protection

$15 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1988 01*

## 0603-50

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Removal of PCBs from soil**

In house study now complete. New techniques now becoming available will be investigated in future.

Financing/*Financement:* Environment Canada, Conservation and Protection

$5 000

**START/*DÉBUT*:** *1986 11* **END/FIN:** *ongoing*

## 0603-51

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Waterjet barrier in moving ice**

To investigate use of waterjet barrier in moving ice. Initial studies in river not successful. Tank tests contemplated but no decision as yet.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

$50 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *ongoing*

## 0603-52

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Burning unconfined slicks**

To investigate feasability of burning of unconfined oil slicks. Theoretical, small, meso and large scale studies were carried out. Combustion products analysed, no increase in PAHs, some change in mix. Report presented at 1986 Arctic Marine Oilspill Program Seminar.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

United States Coast Guard

$150 000

**START/*DÉBUT*:** *1985 07* **END/FIN:** *1987 07*

## 0603-53

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Use of waterjets to control oil in waves and currents**

To investigate concept, build prototype and learn limits of technology. Studies are now complete. Final phase conducted as joint project with Japanese Ship Building Institute. Report presented at 1987 Arctic Marine Oilspill Program Seminar.

Financing/*Financement:* Environment Canada, Conservation and Protection

$350 000

**START/*DÉBUT*:** *1980 09* **END/FIN:** *1987 06*

## 0603-54

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Tests to evaluate the effect of a waterjet barrier on the burning efficiency of a floating oil slick**

To test the hypothesis that the waterjet barrier may improve the combustion of oil on water by providing greater aeration of the flame. Tank tests have been completed. Report EE112 is available from Environment Canada. Tests were attempted in a river with a high current but the barrier configuration would not properly contain the oil so no burning was performed.

Financing/*Financement:* Minerals Management Service, U.S. Dept. of the Interior

Environment Canada, Conservation & Protection

$71 271

**START/*DÉBUT*:** *1988 09* **END/FIN:** *1990 08*

## 0603-55

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Selection criteria and laboratory evaluation of oil spill sorbents - update IV**

A number of commercially available oil spill sorbents were tested using three different petroleum products and two hydrocarbon solvents. The sorbents were tested for oil collection capacity, water pick up and number of reuses for each sorbent in each liquid. A report will be available from Environment Canada in late 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

$20 000

**START/*DÉBUT*:** *1990 04* **END/FIN:** *1991 03*

## 0603-56

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Butane stripping as an environmental emergency countermeasure**

To investigate butane stripping as an environmental emergency countermeasure and build a unit if the process is more capable and economic than steam stripping. Bench scale unit has been built and will be tested at River Road Labs. in 1990-91.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$252 218

**START/*DÉBUT*:** *1987 08* **END/FIN:** *1989 08*

## 0603-57

Punt, M
(613) 991-1840

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Steam stripping as an environmental emergency countermeasure**

A feasibility study has been completed and a report written. A mobile pilot plant was constructed and will be tested in May 1990 at a groundwater site.

Financing/*Financement:* Environment Canada, Conservation & Protection

$240 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

## 0603-58

Ricketts, P
(902) 420-5740

St. Mary's University

**Resource & environmental data base & information mapping & atlas for Gulf of Maine, marine region**

Prepare an electronic and atlas format database of existing information on the marine features and resources of the Gulf of Maine, Bay of Fundy and Georges Bank areas.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

Council of Maritime Premiers

Nova Scotia Department of Fisheries

$222 000

**START/*DÉBUT*:** *1987 10* **END/*FIN*:** *1990 03*

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## 0603-59

Robertson, J
(519) 679-3857

Department of Epidemiology and Biostatistics; University of Western Ontario

**Reproductive Outcomes in Southwestern Ontario**

To carry out an epidemiological study of potential health effects caused by chemical spills and potential contamination of drinking water in the Lambton and Kent counties.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$65 000

**START/*DÉBUT*:** *1986 07* **END/*FIN*:** *1989 09*

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## 0603-60

Rooney, D
(416) 630-6331

Concord Scientific Corporation

**Augmentation of List of Toxic Chemicals**

To update chemical list for toxic gas release emergency program and to augment search routines.

Financing/*Financement:* Ontario Ministry of the Environment, Air Resources Branch

$23 200

**START/*DÉBUT*:** *1987 03*

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## 0603-61

Sekerka, I
(416) 336-4657

Research and Applications Branch; National Water Research Institute; Environment Canada

**Continuous flow analytical systems**

To develop in-line preconcentration and digestion systems. To develop FIA method for ammonia using isothermal distillation principle. To test the robotic system under routine operation conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1990 03*

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## 0603-62

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Systèmes experts pour la gestion et la protection de l'environnement.**

Mettre au point des outils utilisant la technique des systèmes experts pour aider à résoudre les problèmes reliés à la gestion et à la protection du milieu naturel comme l'aide à la décision en cas de déversements accidentels de produits toxiques, l'évaluation rapide des impacts potentiels d'un projet, etc.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Hydro-Québec

$25 000

**START/*DÉBUT*:** *1986*

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## 0603-63

Teskey, W
(403) 220-7397

University of Calgary; Dept. of Surveying Engineering

**Deformation surveys research**

Precise trig levelling - objective is to determine if precise trig levelling can be used to determine vertical movements of 5 mm (in structures such as earthfill dams) over lines of observation of up to 500 metres. Integrated analysis - objective is to integrate measured deformations (determined by survey and geotechnical methods) on or in a structure into the finite element model for the structure to better estimate actual deformation behaviour.

Financing/*Financement:* Alberta Environment

$25 000

**START/*DÉBUT*:** *1988 08*

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## 0603-64

Teskey, W
(403) 220-7397

University of Calgary

**Deformation surveys research**

To prepare a report on standards & specifications for deformation surveys carried out using conventional, photogrammetric, and GPS (Global Positioning System) satellite methods. A report entitled 'Standards & Specifications for Deformation Surveys' (covering conventional survey methods) is available from Alberta Environment. In 1987/88 the report is being expanded to include photogrammetric survey & GPS satellite survey methods. The expanded report will be done by March 31, 1988.

Financing/*Financement:* Alberta Environment

$33 000

**START/*DÉBUT*:** *1986 09*

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## 0603-65

Tilden, D
Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**'Environmental Atlas for Beaufort Sea Oil Spill Response' by D.F. Dickens, et al for EPS, March 1987**

To provide environmental information relevant to the planning and implementation of year-round oil spill countermea-

sures in both coastal and offshore areas of the Beaufort Sea. Final report is available free of charge while quantities last, from EPS - NWT District Office, P.O. Box 370, Yellowknife, NWT, X1A 2N3.

Financing/*Financement:* Northern Oil and Gas Action Program

$265 040

**START/*DÉBUT***: *1985 06* **END/FIN**: *1987 06*

## 0603-66

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Mobile reverse osmosis/adsorption system as an environmental emergency countermeasure**

A mobile system was developed and tested. Very good results were achieved on organic chemical contaminated leachates and surface water at a petrochemical distribution terminal. The system was used to clean up the aqueous residue from a pesticide warehouse fire in Canning N.S. Reports were presented at the 1987 Technical Seminar on Chemical Spills.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Dow Chemical Inc.

$280 000

**START/*DÉBUT***: *1985 11* **END/FIN**: *1987 07*

## 0603-67

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Ultrasonic burner for the insitu combustion of thin oil slicks.**

An ultrasonic burner has been built. Testing revealed poor performance in waves. The unit has been tested using air jet transducers. A report is available from the Environmental Emergencies Technology Division at (613) 998-9622.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

$335 000

**START/*DÉBUT***: *1984 01* **END/FIN**: *1989 02*

## 0603-68

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Equipment evaluations by the U.S. OHMSETT facility**

To investigate oil and chemical spill countermeasures and equipment in conjunction with U.S. agencies. A joint project agreement with U. S. EPA has been initiated.

Financing/*Financement:* Environment Canada, Conservation and Protection

$180 000

**START/*DÉBUT***: *1982 08* **END/FIN**: *1991 03*

## 0603-69

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**In-situ burner for stranded oil**

To investigate and design a portable burner for the clean up of oil stranded on beaches. A report was published in the ESRF series in May 1987.

Financing/*Financement:* Environmental Studies Revolving Fund

$88 000

**START/*DÉBUT***: *1985 06* **END/FIN**: *1987 05*

## 0603-70

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Prototype airborne laser system for igniting oil slicks**

To investigate the concept, design and build a system. Focussing and aiming studies now underway. Basic design is complete. Pointing and tracking system now completed.

Financing/*Financement:* Environment Canada, Conservation & Protection

Minerals Management Service, U.S. Dept. of the Interior

Department of Supply & Services Canada

Arctic Marine Transport

Indian and Northern Affairs Canada

$340 000

**START/*DÉBUT***: *1983 11* **END/FIN**: *1990 03*

## 0603-71

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Investigation of a mobile solvent extraction system as an environmental emergency countermeasure**

To investigate the concept of a mobile system; design and construct the system.

Financing/*Financement:* Environment Canada, Conservation and Protection

$80 000

**START/*DÉBUT***: *1987 06* **END/FIN**: *1990 06*

## 0603-72

Whittaker, H
(613) 991-1842

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Offshore trial of booms and skimmers**

To test three booms and three skimmers with 75 tonnes of oil in offshore Newfoundland waters. One boom was instrumented and data acquired for development of a boom test protocol.

Financing/*Financement:* Environment Canada, Conservation and Protection

Minerals Management Service, U.S. Dept. of the Interior

Canadian Coast Guard

$470 000

**START/*DÉBUT***: *1986 08* ***END/FIN***: *1987 09*

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## 0603-73

Wilson, J
(604) 656-0101

RSI Robotic Systems International Ltd.

**Remote systems for hazardous environments**

Develop the hardware, software and control electronics to allow deployment of remote work systems in hostile and hazardous environments.

Financing/*Financement:* National Research Council

Robotic Systems International Ltd.

University of British Columbia

$250 000

**START/*DÉBUT***: *1983 02*

### 0604-1

Arnason, J
(613) 564-3458

University of Ottawa; Biology

**Synthetic and naturally occuring phototoxins for insect control**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$240 000

**START/*DÉBUT*:** *1986 11* **END/FIN:** *1989 10*

### 0604-2

Arnason, J
(613) 564-3458

University of Ottawa; Biology

**Phytochemical control of European corn borer**

none given

Financing/*Financement:* Ontario Ministry of Agriculture & Food

$234 190

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1989 03*

### 0604-3

Arnason, J
(613) 564-3458

University of Ottawa; Biology

**Resistance mechanisms in maize**

none given

Financing/*Financement:* International Development Research Centre

$266 644

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1989 07*

### 0604-4

Arnason, J
(613) 564-3458

University of Ottawa; Biology

**Significance of phenolic acid-carbonhydrate complexes in resistance of grain to pests and in processing**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$300 000

**START/*DÉBUT*:** *1988 11* **END/FIN:** *1991 10*

### 0604-5

Arnason, J
(613) 564-3458

University of Ottawa; Biology

**Secondary metabolites as naturally occuring protective agents in plants**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$111 555

**START/*DÉBUT*:** *1983 04* **END/FIN:** *1989 03*

### 0604-6

Blakeman, W
Paine, P
(819) 953-1105

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assessment of status and environmental implications of emerging advanced coal cleaning technologies**

To identify emerging advanced physical, chemical and biological coal cleaning technologies in U.S., Canada and world wide. To identify and assess their commercialization potential and the environmental implications of the processes themselves vis à vis their effectiveness in reducing SO2 emissions from U.S. and Canadian combustion sources.

Financing/*Financement:* Long Range Transport of Airborne Pollutants Program Funds

Environment Canada, Conservation and Protection

$200 000

**START/*DÉBUT*:** *1986 12* **END/FIN:** *1991 06*

### 0604-7

Collins, E
Howarth, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Northern marine pipeline control technology**

To provide technical background suitable for the development of guidelines to ensure that future oil and gas pipelines in Canada's Arctic are constructed and operated in an environmentally acceptable manner.

Financing/*Financement:* Northern Oil and Gas Action Program

$100 000

**START/*DÉBUT*:** *1985 12* **END/FIN:** *1987 03*

## 0604-8

de Lasa, H
Lee, S
(519) 661-2144

University of Western Ontario; Chemical Reactor Engineering Centre; Faculty of Engineering

**Two phase flow model for simulation of an industrial fluidized bed boiler**

To develop the model equations for a fluidized combustion boiler. The model equations are being incorporated in a simulator of a power station in which the central unit is a fluidized bed boiler (available with permission of SACDA).

Financing/*Financement:* SACDA Inc.

$3 000

**START/*DÉBUT***: *1989 05* **END/*FIN***: *1989 06*

## 0604-9

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evalution & demonstration of advanced coal combustion technologies**

To demonstrate new, cost effective technologies for reducing acid gas emissions.

Financing/*Financement:* Environment Canada, Conservation & Protection

$650 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *ongoing*

## 0604-10

Draper, W
(819) 953-1120

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Petroleum fuel desulphurization**

To examine options for reducing acid gas emissions resulting from combustion of petroleum fuels.

Financing/*Financement:* Environment Canada, Conservation & Protection

$400 000

**START/*DÉBUT***: *1977* **END/*FIN***: *1988 03*

## 0604-11

Finlay, P
(819) 953-1126

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Demonstration of furnace injection of sorbent at the Boundary Dam Power Plant**

To demonstrate & optimize operation of sorbent injection technology on lignite coal.

Financing/*Financement:* Environment Canada, Conservation & Protection

Canadian Electrical Association

Saskatchewan Power Corporation

$5 250 000

**START/*DÉBUT***: *1982* **END/*FIN***: *1988 00*

## 0604-12

Guay, R
(418) 656-5795

Université Laval; Département de microbiologie

**Décomposition de l'arsénopyrite aurifère par thiobacillus ferrooxydans.**

Récupération de métaux précieux à partir de minerais réfractaires (arsénopyrite) et confinement des espèces toxiques (arsenic et scorodite) pour en disposer d'une manière sécuritaire.

Financing/*Financement:* Fonds personnel

## 0604-13

Houseman, J
(613) 564-3949

University of Ottawa; Biology

**Interaction between plant protease inhibitors and secondary metabolites on insect physiology**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$45 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1990 03*

## 0604-14

Laurin, M
Soreau, P
(514) 641-3883

Thermonic

**Mise au point et démonstration (R/D et D) d'une technologie d'assainissement des eaux industrielles et de recyclage des métaux lourds et autres rejets chimiques industriels.**

Mise au point d'une nouvelle technologie simple et efficace de traitement des effluents industriels afin d'éliminer de ces eaux tout déchet organique et/ou inorganique solubilisé. Un second objectif est de récupérer et recycler ces produits chimiques ainsi que tout autre déchet chimique industriel. Rapport disponible.

Financing/*Financement:* Canada, ministère de l'Industrie, Science et Technologie

Canada, ministère de l'Environnement

Société québécoise d'assainissement des eaux

$4 400 000

**START/*DÉBUT***: *1988 09* **END/*FIN***: *1990 09*

## 0604-15

Lawson, D
(306) 780-6462

Environment Canada; Conservation and Protection; Environmental Protection

**Radionuclides in vegetation**

Baseline study for assessing impact of uranium mining

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation and Protection

Saskatchewan Health Resources Board

Indian and Northern Affairs Canada

$195 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 03*

## 0604-16

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Demonstration of circulating fluidized bed combustion - Chatham power plant**

To develop a combined SO2/NOx emission control technology to commercial availability.

Financing/*Financement:* Energy, Mines & Resources Canada

New Brunswick Electric Power Corporation

$41 000 000

**START/*DÉBUT*:** *1984* **END/FIN:** *1989 00*

## 0604-17

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology

**Low NOx burner development for power plants**

To develop & install low NOx burners on Canadian power plants

Financing/*Financement:* Energy, Mines & Resources Canada

Ontario Hydro

$5 000 000

**START/*DÉBUT*:** *1979* **END/FIN:** *1990 00*

## 0604-18

Lee, G
(613) 996-4570

Energy, Mines & Resources Canada; Canada Centre for Mineral & Energy Technology (EMR)

**Demonstration of furnace injection of sorbent at the Camp Gagetown heating plant**

To demonstrate a cost effective emission technology.

Financing/*Financement:* Energy, Mines & Resources Canada

$2 700 000

**START/*DÉBUT*:** *1982* **END/FIN:** *1988 00*

## 0604-19

Leung, P
(613) 991-9456

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Hazardous waste incineration technology development**

To develop thermal decomposition profiles for candidate chemicals for incineration.

Financing/*Financement:* Environment Canada, Conservation and Protection

$85 000

**START/*DÉBUT*:** *1987* **END/FIN:** *ongoing*

## 0604-20

Lo, S
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Cuisson en phase vapeur de feuillus et d'essences à croissance rapide avec et sans recyclage de la liqueur résiduelle d'imprégnation.**

Réduire la pollution des rejets aqueux. Réduire la consommation d'énergie.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science

$45 000

## 0604-21

Luciani, A
(416) 227-5562

IPMCC

**Mating disruption as an alternative management strategy for the gypsy moth**

Test the efficacy of non-chemical alternatives (Luretape GM, scraping and destroying egg masses and burlap trapping) in Southern Ontario urban/suburban and rural forest environments. Evaluate the suitability, practicallity and economics of non-chemical alternatives.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$15 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0604-22

Mc Neil, N
(418) 659-1550

Centre de recherche industrielle du Québec

**Elaboration d'un répertoire de références en technologies propres.**

Produire un répertoire de références en technologies propres dont le développement est principalement au stade de la démonstration ou de la commercialisation dans les secteurs des pâtes et papier, de la métallurgie, des mines, de la chimie inorganique et organique, des revêtements de surface et du pétrole. Ces références seront accessibles sur banque de données informatisées et mises à la disposition des entreprises manufactières du Québec.

Financing/*Financement:* Québec, ministère de l'Environnement

Centre de recherche industriel du Québec

$116 000

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1988 12*

## 0604-23

McClay, A
(403) 632-6761

Alberta Environmental Centre

**Priority list of weeds for biological control**

To review the agricultural weeds of Alberta and select the most suitable species for classical biological control by introduction of natural enemies. Completed, final report available.

Financing/*Financement:* Alberta Environmental Centre
$40 000
**START/*DÉBUT*:** *1984 02* **END/*FIN*:** *1989 01*

## 0604-24

McClay, A
(403) 632-6761

Alberta Environmental Centre

**Biology and host-specificity of candidate arthropod biocontrol agents for selected weeds**

To study the biology and host-specificity of biocontrol agents proposed for release in Alberta to ensure that they will not damage non-target plants and to assess their effectiveness. Work mainly carried out under contract by CAB International Institute of Biological Control. Reports on several species available.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1985 04*

## 0604-25

McClay, A
(403) 632-6761

Alberta Environmental Centre

**Introduction, release and monitoring of arthropod biocontrol agents for selected weeds**

To release approved biological control agents for weeds in Alberta, monitor release sites to determine whether agents have established, and evaluate factors affecting establishment.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1984 04*

## 0604-26

McClay, A
(403) 632-6761

Alberta Environmental Centre

**Post-establishment studies of weed-biocontrol agent interactions**

To evaluate the effectiveness of biocontrol agents established against weeds in Alberta in controlling their target weeds.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1986 04*

## 0604-27

O'Donovan, J
(403) 632-6761

Alberta Environmental Centre

**Weed/crop competition - crop losses due to weeds**

To determine the competitive effects of weeds and volunteer crops under Alberta conditions and to develop mathematical models to help determine the economics of weed control with herbicides. Results are reported annually in the Research Report of the Expert Committee on Weeds (Western Canada), and scientific papers have been published in Weed Science (4), Weed Technology (1) and Canadian Journal of Plant Science (1).

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1982 01*

## 0604-28

O'Donovan, J
(403) 632-6761

Alberta Environmental Centre

**Biology of weeds of Alberta**

To study weed growth and development as affected by environmental factors, and the mechanisms controlling germination and dormancy of weed seed. Two scientific papers have been published in the Canadian Journal of Plant Science.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1981 04*

## 0604-29

O'Donovan, J
(403) 632-6761

Alberta Environmental Centre

**Weed surveys and population dynamics**

To update information on the abundance and distribution of weeds in Alberta and to monitor potential changes in weed populations following weed control practices. A report is in preparation in cooperation with Alberta Agriculture.

Financing/*Financement:* Alberta Environmental Centre
**START/*DÉBUT*:** *1987 04*

## 0604-30

Peters, R
(514) 375-1991

Agropur, Coopérative agro-alimentaire

**Contrôle des pertes de produits dans l'industrie laitière.**

Contrôle des pertes du lait et de ses dérivés dans un complexe de fromagerie et séchage de lactosérum et de lait écrémé en bas de un (1) pourcent.

Financing/*Financement:* Fonds institutionnel de recherche
$430 000
**START/*DÉBUT*:** *1987 01* **END/*FIN*:** *1988 11*

## 0604-31

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Response of insects to plant xenobiotics**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$174 057

**START/*DÉBUT*:** *1983 04* **END/FIN:** *1992 03*

## 0604-32

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Development of phototoxins as control agents for blood feeding insects**

none given

Financing/*Financement:* Department of National Defence Canada

$192 753

**START/*DÉBUT*:** *1984 12* **END/FIN:** *1987 08*

## 0604-33

Philogène, B
(613) 564-2407

University of Ottawa; Biology

**Botanical pesticides**

none given

Financing/*Financement:* International Development Research Centre

$75 200

**START/*DÉBUT*:** *1988 02* **END/FIN:** *1991 02*

## 0604-34

Pinault, P
(819) 953-1121

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Modifications to CANSIM computer model for Canadian power utilities**

Maintain up to date capability to analyze emission control options available to Canadian power utilities & their costs.

Financing/*Financement:* Environment Canada, Conservation & Protection

$300 000

**START/*DÉBUT*:** *1982* **END/FIN:** *1992 00*

## 0604-35

Ross, G
(819) 997-1222

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Assess environmental implications and control technologies for fluidized bed combustion facilities**

Publish recommended practices for fluidized bed combustion waste/ wastewater handling and disposal.

Financing/*Financement:* Panel on Energy Research and Development

$1 404 000

**START/*DÉBUT*:** *1981 04* **END/FIN:** *1993 03*

## 0604-36

Steiner, M
(403) 632-6761

Alberta Environmental Centre

**Integrated pest management for greenhouse pests**

This is an ongoing program currently working on western flower thrips control in greenhouse cucumbers and sweet potatoe whitefly in poinsettias. Annually, reports on pesticide bioassays are submitted and published in the Pesticide Research Report of Agriculture Canada, report on thrips program submitted to Farming for the Future, Alberta Agriculture.

Financing/*Financement:* Alberta Environmental Centre

Farming for the Future, Alberta Agriculture

**START/*DÉBUT*:** *1986 04*

## 0604-37

Tollefson, E
(403) 220-5754

Department of Chemical & Petroleum Engineering; University of Calgary

**Oxidation of low concentrations of hydrogen sulfide in natural gas over activated carbon catalysts**

The objective was to remove hydrogen sulfide in low concentrations from natural gas by oxidation with air using an activated carbon catalyst. The hydrogen sulfide is converted to sulfur and water which can readily be collected, the sulfur being a saleable product.

Financing/*Financement:* Canadian Gas Processor's Association

Natural Sciences and Engineering Research Council

$35 000

**START/*DÉBUT*:** *1983 06*

## 0604-38

Tonelli, F
(416) 639-6320

Zenon Environmental Inc.

**A case history of cheese whey concentration by reverse osmosis**

1. To document the background leading to the application of osmosis technology for concentration of cheese whey for cattle feed. 2. To observe and monitor the process in operation at a Canadian cheese plant, in terms of process efficiency and environmental compliance. 3. To provide a technical, environmental, and economic evaluation of the process and equipment utilized and make recommendations for design and operating practices at a new installation of similar scale.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

**$23 900**
**START/*DÉBUT*:** *1985 08* ***END/FIN*:** *1986 02*

## 0605-1

Abouguendia, Z
(306) 933-8185
Saskatchewan Research Council

**Effects of drilling wastes on agricultural land**

To evaluate the effect of land application of drilling wastes from Sask. oilfields on soils and crops. Report will be available in April 1988.

Financing/*Financement:* Saskatchewan Energy and Mines
Energy Mines and Resources Canada
Saskatchewan Research Council
$188 000

**START/*DÉBUT*:** *1985 02* **END/FIN:** *1988 03*

## 0605-2

Alfieri, A
MeConnen, M
(416) 235-6001
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of base/neutral and phenolic compounds in (MISA test groups 19, 20) municipal sewage sludge**

To develop method for the analysis of base/neutral and phenolic compounds in municipal sludge.

Financing/*Financement:* Ontario Ministry of Environment
$95 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1990 03*

## 0605-3

Alikhan, M
(705) 673-3042
Laurentian University; Biology

**Magnesium and manganese uptake and accumulation in terrestrial crustacea**

To determine effects of magnesium and manganese accumulation in fully-fed and starved terrestrial crustacea. Bull. Envir. Contam. Toxicol. 43(1989) :151-158 and Arch. int. Physiol. Biochimie 97(1989), in press.

Financing/*Financement:* Natural Sciences & Engineering Research Council
Weiller Foundation of Israel
$15 640

**START/*DÉBUT*:** *1987 05* **END/FIN:** *1988 04*

## 0605-4

Alikhan, M
Mwangi, S
(705) 673-3042
Laurentian University; Biology

**Laboratory study of the relationship between cadmium and nickel uptake on copper and zinc concentrations in selected tissues of freshwater crayfish**

To correlate concentrations of cadmium and nickel in whole crayfish with concentrations of metals injected into crayfish. To determine effects of cadmium and nickel injections on copper and nickel stores in the selected tissues of the crayfish.

Financing/*Financement:* Canadian International Development Agency
$50 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 03*

## 0605-5

Alikhan, M
Pani, A
(705) 675-1151
Laurentian University; Biology

**Uptake and accumulation of magnesium and manganese in terrestrial crustacea**

To determine the effect of magnesium and manganese accumulation on oxygen and nitrogen metabolism in terrestrial crustacea. M.Sc. Thesis available

Financing/*Financement:* Natural Sciences and Engineering Research Council
$21 100

**START/*DÉBUT*:** *1985 09* **END/FIN:** *1987 08*

## 0605-6

Alkema, H
(416) 336-4929
Research and Applications Branch; National Water Research Institute; Environment Canada

**WQB, PPWB and federal/provincial quality assurance programs**

To ensure that data generated by WQB, PPWB and laboratories in the Federal/Provincial Agreements are of good and comparable quality.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1982 09* **END/FIN:** *ongoing*

## 0605-7

Anderson, P
(514) 848-3391

Université Concordia; Laboratoire d'écotoxicologie

**Modèles écotoxicologiques de polluants chimiques dans l'environnement aquatique**

Screens chemical pollutants as risks to the wellbeing of aquatic organism by studying their availability and toxicity; investigates through the use of laboratory models, the effects of toxicants on organism, their populations and communities; creates water quality criteria.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$60 000

**START/*DÉBUT***: *1987* **END/FIN**: *1989*

## 0605-8

Armstrong, V
(613) 957-1504

Health and Welfare Canada; Environmental Health Directorate

**Environmental criteria (major goal: 2308)**

To evaluate the health hazards associated with exposure to environmental and workplace contaminants and recommend measures to control human exposure to these.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$1 219 817

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0605-9

Armstrong, V
(613) 957-1504

Health and Welfare Canada; Environmental Health Directorate

**Environmental criteria (major goal: 2309)**

To serve as national correspondent to the International Register of Potentially Toxic Chemicals (IRPTC) and develop and maintain an information resource to support bureau programs.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$277 963

**START/*DÉBUT***: *1985 04* **END/FIN**: *ongoing*

## 0605-10

Aspila, K
(416) 336-4638

Research and Applications Branch; National Water Research Institute; Environment Canada

**IJC quality control studies**

Provide five interlaboratory quality control comparison studies to laboratories in the Great Lakes Basin that support the IJC-Canada U. S. Great Lakes Quality Agreement.

Financing/*Financement:* Environment Canada, Conservation and Protection

$2 000 000

**START/*DÉBUT***: *1978 04* **END/FIN**: *ongoing*

## 0605-11

Au, L
(416) 235-6000

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Method development for VOST & VOL**

To develop an analytical method for VOST samples.

Financing/*Financement:* Ontario Ministry of Environment

$62 000

**START/*DÉBUT***: *1989 01* **END/FIN**: *1990 06*

## 0605-12

Averill, D
(416) 336-4747

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Process control and upgrading of effluent filtration**

To develop process control and monitoring strategies for granular media filters employed in either municipal or industrial wastewater treatment processes and to develop a better understanding of filter design and operation procedures. To optimize granular media filter systems for specific wastewater applications. Interim reports available from the project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection

$383 000

**START/*DÉBUT***: *1981* **END/FIN**: *ongoing*

## 0605-13

Baddaloo, E
(403) 427-3943

Alberta Environment

**Fate of contaminants - Athabasca River**

To determine threshold values for the human perceptions of taste and odour for representative chemical compounds identified as possibly being responsible for off-flavours in fish flesh.

Financing/*Financement:* Alberta Environment

$50 000

**START/*DÉBUT***: *1985 06* **END/FIN**: *1987 03*

## 0605-14

Baddaloo, E
(403) 427-3943

Alberta Environment

**Persistence and movement of contaminants from heavy oil recovery**

To model the environmental behaviour (movement, accumulation and persistance) of potentially toxic or biologically active organic compounds from heavy oil recovery processes. The approximate equilibrium and non-equilibrium distri-

butions for a range of organic contaminants was determined. (Interim Report available from Alberta Environment).

Financing/*Financement:* Alberta Environment

$100 000

**START/*DÉBUT*:** *1985 07* **END/FIN:** *1987 03*

## 0605-15

Baker, R
(819) 953-1693

Environment Canada; Conservation & Protection; Management of Emergencies Branch

**Evaluation of the sediment quality triad approach to monitoring the degradation of sediment by contaminants**

The investigation of the physical, chemical and biological effects of dredging and dumping of contaminated sediments. To develop the 'triad approach' to effects monitoring for routine application in Canada, wherever toxic sediment has been or could become a serious problem.

Financing/*Financement:* Environment Canada, Conservation & Protection

Federal Environmental Assessment Review Office

Department of Fisheries & Oceans Canada

$55 000

**START/*DÉBUT*:** *1989 09* **END/FIN:** *1990 06*

## 0605-16

Barchard, W
(902) 426-8301

Environment Canada; Conservation & Protection

**Release of oil-based drilling fluids & oily cuttings into the Canadian Northwest Atlantic**

Laboratory and field evaluations of long and short-term environmental effects of oil-based muds and contaminated cuttings. Both diesel oil and naphthenic and parafinic alternates were evaluated.

Financing/*Financement:* Panel on Energy, Research & Development

Environment Canada, Conservation & Protection

Environment Canada, Conservation & Protection

$75 000

**START/*DÉBUT*:** *1983 02* **END/FIN:** *1987 03*

## 0605-17

Baxter, R
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Reductive dehalogenating environmental contaminants**

To evaluate the role of reductive processes (including but not limited to dehalogenation) in the degradation of environmental contaminants using sediments from representative lakes in Jack Lake study area MODLES and elsewhere as appropriate.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

## 0605-18

Beauchamp, E
Kachanoski, G
(519) 824-4120

Department of Land Resource Science; University of Guelph

**Crop management & nitrate contamination of groundwater with sandy soils used for tobacco production**

Includes - quantification of nitrate leaching to groundwater with a corn crop with the effects of applied fertilizer N, tillage practices and irrigation practices.

Financing/*Financement:* Agriculture Canada, Tobacco Diversification Plan

$400 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1992 03*

## 0605-19

Beckett, P
(705) 675-1151

Laurentian University; Biology

**Tree establishment on acid metal contaminanted soils in Sudbury, Ontario**

Restoration of damaged land to improve aesthetic quality of living in an urban environment. Reports are available.

Financing/*Financement:* Employment and Immigration Canada

Ontario Ministry of Northern Mines and Development

Regional Municipality of Sudbury

$64 000

**START/*DÉBUT*:** *1979*

## 0605-20

Beckett, P
(705) 675-1151

Laurentian University; Biology

**Effects of contaminants on mosses and lichens**

Detection of short and long-term changes in the moss and lichen flora of NE Ontario ecosystems as affected by contaminants. Effects of metals on moss and lichen physiology. Report available.

Financing/*Financement:* Laurentian University Research Fund

$7 000

**START/*DÉBUT*:** *1979*

## 0605-21

Beckett, P
Courtin, G
(705) 675-1151

Laurentian University; Biology

**Remote sensing and geobotany as an aid to mineral exploration in northern terrains**

To understand the geochemical & biochemical processes involved in the release & uptake of various metals from bedrock & overburden into the various tissues of vascular (trees & shrubs) & nonvascular (lichen, mosses & fungi) plants. Interim reports available.

Financing/*Financement:* Ontario Geological Survey

Centre in Mining & Mineral Exploration

$138 150

**START/*DÉBUT***: *1986 01*

## 0605-22

Beveridge, T
(519) 824-4120

Department of Microbiology; University of Guelph

**Heavy metal immobilization by bacteria and their products: biomineralization**

To study the fundamental interactions of bacteria with soluble toxic heavy metal ions and the resulting biomineral which is formed.

Financing/*Financement:* Natural Sciences and Engineering Research Council

United States Environmental Protection Agency

## 0605-23

Bourbonnière, R
(416) 336-4547

Rivers Research Branch; National Water Research Institute; Environment Canada

**Natural and anthropogenic organics related to oil sands development**

Initiate study by participation in multi-disciplinary reconnaissance program in the Athabasca River area. Complete committments to LRTAP Natural Acidity (publication).

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1993 03*

## 0605-24

Boyce, F
(416) 336-4921

Lakes Research Branch; National Water Research Institute; Environment Canada

**Assessment of sediment trap studies 1985-89**

To summarize report on sediment trap studies undertaken in Lake St. Clair, Lake Ontario, Hamilton Harbour and hydraulics flume 1985-89. To test different sediment trap designs under controlled conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

$250 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0605-25

Brownlee, B
(416) 336-4706

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant transport in rivers**

Research on improved methods of measuring and modelling transport of contaminants on suspended particulate matter in rivers. The emphasis will be on oil sands related contaminants (PAHs and related compounds) in the Athabasca River.

Financing/*Financement:* Environment Canada, Conservation and Protection

$700 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1994 03*

## 0605-26

Bumbaco, M
(613) 998-3671

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**PCB sampling and analysis procedures**

To develop analytical methods for measurement of PCBs in oils, soils, ambient air and stack emissions. Recommended procedures for: oil available Dec. 1987 (revised April 1989), soil available July 1988 (revised April 1989), ambient and source emissions available April 1989. Revisions will continue to be ongoing.

Financing/*Financement:* Environment Canada, Conservation and Protection

$120 000

**START/*DÉBUT***: *1984 00* **END/*FIN***: *1989 00*

## 0605-27

Burnison, B
(416) 336-4706

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of organic contaminants on microbial activities in natural waters**

To determine the effect of organic contaminants on bacterial productivity in various lakes. To determine the effect of organic contaminants on bacterial heterotrophy in various lakes. To further characterize the chemical composition of previously isolated DOC fractions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$450 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

## 0605-28

Carey, J
(416) 336-4693

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant pathways in receiving waters**

To identify factors controlling bioaccumulation of atmospheric contaminants in lake organisms. Investigate contaminant transport in Fraser River estuary. Begin study on fate and effect of pulp mill related chlorinated organics in receiving waters. Evaluate adverse effects of pulp mill effluents on fish (DFO-Hodson). Investigate processes controlling fate of TCMTB in Fraser River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Pesticides Program Funding

$650 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

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## 0605-29

Carignan, R
(418) 654-2534

Université du Québec; INRS-eau

**Biogéochimie de l'interface eau-sédiment**

Caractérisation et quantification du transport de substances dissoutes à l'interface eau-sédiment des lacs. Appliquer ces études au transport de substances nutritives (P, N, Si) et toxiques (métaux traces) entre les sédiments superficiels et la colonne d'eau. Préciser le rôle des invertébrés benthiques dans le transport des substances dissoutes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$35 000

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## 0605-30

Chan, C
(416) 890-2555

Mann Testing Laboratories Limited

**Method Development for Aqueous Volatile Halocarbons Analysis at the parts Per Trillion Level**

To develop methodology for the quantitative routine analysis of ambient water for volatile halocarbon compounds in the low parts per trillion (w/w) range.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$30 000

**START/*DÉBUT*:** *1987 05*

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## 0605-31

Charlton, M
(416) 336-4758

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effectiveness of pollution abatement in Hamilton Harbour**

To determine effects of recent abatements at Hamilton STP as a way of finding total reductions needed. Begin study on zinc availability under high and low oxygen conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$540 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

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## 0605-32

Chau, A
(416) 336-4653

Research and Applications Branch; National Water Research Institute; Environment Canada

**CEPA quality assurance**

To establish an interagency QA program for two CEPA Priority Substances which assist CEPA managers and regulating bodies to ensure the validity of analytical data.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *ongoing*

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## 0605-33

Chau, A
(416) 336-4653

Research and Applications Branch; National Water Research Institute; Environment Canada

**QA for the Canadian national pulp mill dioxin monitoring program**

To form and chair a Dioxin QA Committee (DQAC) to develop and implement a QA program and to advise DOE Dioxin Task Force and the Canadian Pulp and Paper Association on data quality.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

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## 0605-34

Chau, Y
(416) 336-4707

Rivers Research Branch; National Water Research Institute; Environment Canada

**Biochemical indicators for studying metal pollution**

Use of metallothioneins (metal binding proteins) and 'Total Nucleotides' in biota to study metal stress and environmental health. Investigation of problem metals in the Athabasca River by analysis of sediment and fish samples.

Financing/*Financement:* Environment Canada, Conservation and Protection

$300 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

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## 0605-35

Ciborowski, J
(519) 253-4232

University of Windsor; Dept. of Biological Sciences

**Standardized rearing materials and procedures for Hexagenia, a benthic bioassay organism**

Collection and cold-storage maintenance of genetically homogeneous Hexagenia egg stocks for distribution to laboratories on request. Synthesis of a standard aquatic sediment and diet from commercially available materials suitable for quickly rearing contaminant-free benthic aquatic invertebra-

tes. Comparison of larval Hexagenia growth on natural (MOE bioassay control site) sediment with synthetic sediment. Assessment of factors contributing to variation in Hexagenia growth and body size. Assessment of influence of sediment-bound organichlorine contaminants on substrate preference, survival, development and bioaccumulation of Hexagenia larvae. Expansion of sediment/diet protocols to scales suitable for mass-culture of rapidly-growing contaminant-free bioassay test organisms.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$48 300

**START/*DÉBUT*:** *1989 05* **END/*FIN*:** *1991 04*

## 0605-36

Clark, D
Sweeney, G
(416) 521-2100

Department of Medicine; McMaster University

**The Quantitative Assessment of Toxicity of Ingested and Inhaled Halogenated Aromatic Hydrocarbons**

1. To obtain information on suppression of the immune response by halogenated aromatic hydrocabons, including TCDD, PCBs and PBBs; 2. To develop sensitive, non-invasive techniques for biological monitoring of toxic effects of aromatic hydrocabons; 3. To clarify the effect of age and route of exposure on 'no demonstrable effect' dose level.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$139 100

**START/*DÉBUT*:** *1984 09*

## 0605-37

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Halogens determination for BC Research**

A method for determining fluoride, bromide and chloride in the presence of high concentrations of sodium hydroxide was developed from previous work with this background.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0605-38

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**Determination of free cyanide from photolysis of waste waters**

Techniques have been developed for studying the release of free cyanide, under natural conditions, from waste water samples. These samples which contain metal-cyanide complexes are non-toxic to fish in laboratory bioassays, but exhibit a rapid release of cyanide in summer sunlight. Chemical species involved in this photolysis can now be measured directly and rapidly by ion chromatography.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0605-39

Clark, M
(604) 387-9947

British Columbia Ministry of Environment & Parks

**ICP installation and modifications**

Software development has been done to enhance sample through-put. Changes were made in the areas of data structure, data storage and data transfer to SAMAN. A hardware interface was designed and constructed which allows an orderly shut-down of the RF-generator, argon and nitrogen gases, the main water flow, the sample delivery system, and the rinse system. This interface is under computer control and will shut down the instrument automatically at the end of a sample run after-hours.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

## 0605-40

Clement, R
(416) 235-5896

Ontario Ministry of Environment; Lab Services Branch

**Validation studies of automated preconcentration water sampler (APS) for dioxin/furans**

To validate the use of the APS for sampling parts-per-quadrilion levels of dioxins/furans in drinking water.

Financing/*Financement:* Ontario Ministry of Environment

$20 000

**START/*DÉBUT*:** *1989 06* **END/*FIN*:** *1989 09*

## 0605-41

Clement, R
(416) 235-5896

Ontario Ministry of Environment; Laboratory Services Branch

**Development of a method for the analysis of brominated dibenzo-p-dioxins (BDD) and brominated dibenzofurans (BDF) in environmental samples by GC/MS**

The contractor will: Gather and review all available international information regarding the toxicities of BDD/BDF and mixed C/BDD and C/BDF. Gather and review all available international information regarding the sources and environmental occcurrence of these compounds. Gather and review all available international information regarding analytical methodologies in use for the detection and quantification of these compounds. Provide a list of current commercial supplies of analytical standards for these compounds.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$23 000

**START/*DÉBUT*:** *1988 06* **END/*FIN*:** *1991 05*

## 0605-42

Clement, R
(416) 235-5896

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Stability study of chlorinated dibenzo-p-dioxins and dibenzofurans in fish during storage**

To determine the effect of freezer storage time on analytical results.

Financing/*Financement:* Ontario Ministry of Environment Laboratory Services Branch

$21 000

**START/*DÉBUT*:** *1987 01* **END/*FIN*:** *1990 07*

## 0605-43

Clulow, V
(705) 675-1151

Laurentian University; Biology

**Radionuclides in fish, water, and sediments of lakes near Elliot Lake Ontario**

Measurement of Ra, Po, Pb, Th, U in tissues of fish and calculation of transfer parameters from environment and risk to human consumers. To be published as AECB report.

Financing/*Financement:* Atomic Energy Control Board

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1989 12*

## 0605-44

Clulow, V
Jean, J
(705) 675-1151

Laurentian University; Biology

**Radionuclide transfer from mother to baby voles (microtus pennsylvanicus) through placenta and milk**

To study the flow and accumulation of Ra-226 from mothers on a spiked diet to offspring in this small mammal; calculation of transfer coefficients. B.Sc. thesis being prepared for publication.

Financing/*Financement:* Laurentian University

**START/*DÉBUT*:** *1986 09* **END/*FIN*:** *1987 07*

## 0605-45

Coakley, J
(416) 336-4881

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sources and transport of contaminated fine sediments, Great Lakes and St. Lawrence system**

To develop and field test means of identifying sources, transport rates and patterns of contaminated fine sediments and apply to specific cases in the Lower Great Lakes and St. Lawrence River system.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1992 03*

## 0605-46

Coburn, J
(416) 825-1492

Zenon Environmental Inc.

**Standard reference materials for trace organic analysis of aqueous environmental samples**

To conduct a comprehensive critical literature review of the preparation of standard aqueous solutions of highly hydrophobic materials, such as dioxins, organochlorine pesticides and polychlorinated biphenyls. Submit a copy of this review to the Drinking Water Organics Section. To prepare a number of generator columns for these hydrophobics, calibrate them and deliver these columns with appropriate certificates to the Drinking Water Organics Section.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$28 000

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1991 06*

## 0605-47

Coppock, R
Khan, A
(403) 632-6761

Alberta Environmental Centre

**Toxicology of insecticides to livestock**

These studies investigate the clinical and subclinical effects of insecticides in domestic livestock as target and non-target species.

Financing/*Financement:* Alberta Environmental Centre

$30 000

**START/*DÉBUT*:** *1984 07* **END/*FIN*:** *1989 07*

## 0605-48

Coppock, R
Khan, A
(403) 632-6761

Alberta Environmental Centre

**Studies on toxicology of petrochemicals**

To determine the acute toxicity of chemicals used in the oil and gas industry.

Financing/*Financement:* Alberta Environmental Centre

$120 000

**START/*DÉBUT*:** *1989 07* **END/*FIN*:** *1994 07*

## 0605-49

Coppock, R
Khan, A
(403) 632-6761

Alberta Environmental Centre

**Studies on experimental toxicology of crude petroleum**

To determine the toxicity of crude petroleum in laboratory animals.

Financing/*Financement:* Alberta Environmental Centre

$30 000

**START/*DÉBUT*:** *1985 05* **END/*FIN*:** *1990 05*

## 0605-50

Coppock, R
Lillie, L
(403) 632-6761
Alberta Environmental Centre

**Development of analytical methods to determine concentrations of xenobiotics in environmental samples and their biochemical effects**

Development of analytical methods to determine metals, and organic substances in tissues, body fluids, and other environmental samples, and to develop methods to determine the biochemical effects of environmental pollutants.

Financing/*Financement:* Alberta Environmental Centre

$100 000

**START/*DÉBUT***: *1985 04* **END/*FIN***: *1990 04*

## 0605-51

Coppock, R
Lillie, L
(403) 632-6761
Alberta Environmental Centre

**Toxicity of crude petroleum in livestock**

To determine the toxicity of crude oil in cattle.

Financing/*Financement:* Alberta Environmental Centre

$120 000

**START/*DÉBUT***: *1987 05* **END/*FIN***: *1992 05*

## 0605-52

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Amélioration de l'outil bioanalytique dans le processus d'évaluation de la toxicité des contaminants.**

Le projet consiste à préciser un pattern de procédures de dépistage permettant une interprétation environnementale de données de toxicologie relative. Trois niveaux d'informations complémentaires aux données de toxicité sont identifiés et une série de procédures sélectionnées pour chacun d'eux: niveau de l'effluent (dégradation, fractionnation), niveau du milieu récepteur (eau de dilution) et niveau du biotope (récupération). Pour ces trois niveaux d'informations, la pertinence écotoxicologique, l'approche utilisée et quelques résultats obtenus avec un effluent de fabrique de pâtes et papiers sont discutés.

Financing/*Financement:* Québec, ministère de l'Environnement

$6 500

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1987 09*

## 0605-53

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Modifications des propriétés structurelles et fonctionnelles aux niveaux population et communauté phytoplanctonique: mécanismes d'acclimatation**

La présente étude consiste à identifier et comprendre le fonctionnement de mécanismes de tolérance induits chez des populations phytoplanctoniques en présence de polluants (CD ou effluent d'une usine chlore-alcali). On précisera en particulier: 1) le rôle de la respiration (phosphorylation oxydative) en tant que générateur fournissant l'énergie nécessaire au maintien de l'intégrité cellulaire dans le processus du développement et de la tolérance; 2) les répercussions des modifications des taux de photosynthèse et de respiration sur le taux de croissance; 3) les modifications dans l'ultrastructure cellulaire et dans la qualité de produits de synthèse concomitantes à l'acquisition de la tolérance.

Financing/*Financement:* Université du Québec, Programme de développement académique du réseau
Fonds institutionnel de recherche

$25 285

**START/*DÉBUT***: *1987 07* **END/*FIN***: *1988 06*

## 0605-54

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Mode d'action de substances altéragènes au niveau communauté phytoplanctonique**

Les objectifs de la présente demande visent à étudier les mécanismes d'acclimatation de la communauté microbienne aquatique suite à des déversements de substances altéragènes. On vise à comprendre comment des modifications dans des propriétés structurelles (chl-a, somme des adénylates, ADN, dénombrement, structure des populations) et fonctionnelles (P/B, charge énergétique, ATP/AMP, ATP/ADP) de communauté microbienne indigène peuvent être associés à un processus d'acclimatation en modulant les taux de croissance et la structure de la communauté indigène. A long terme, on définira une approche écotoxicologique pour déterminer les risques environnementaux des déversements de substances toxiques au niveau des producteurs primaires.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$5 000

**START/*DÉBUT***: *1986 06* **END/*FIN***: *1987 05*

## 0605-55

Couture, P
(418) 654-2578
Université du Québec; INRS-eau

**Etude de faisabilité pour la réalisation d'un biotest algal à partir de réactif biologique lyophilisé.**

La lyophilisation (séchage à froid) est proposée comme une technique pratique et abordable pour la conservation de souches destinées à la réalisation de bioessais. L'efficacité de certaines conditions d'incubation préalables à la lyophilisation est étudiée pour améliorer la résistance au séchage à froid de cultures de Selenastrum capricornutum, une espèce largement utilisée dans les laboratoires d'Environnement Canada pour la détection des dangers reliés au déversement de substances toxiques. L'influence de la procédure de lyophilisation, de la solution de reconstitution et du mode de reconstitution sur l'activité et le taux de récupération de cultures lyophilisées est précisée.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$33 268
**START/*DÉBUT*:** *1988 06* **END/FIN:** *1989 06*

## 0605-56

Couture, P
Campbell, P
(418) 654-2578
Université du Québec; INRS-eau

**Sensibilité du saumon atlantique (stade: alevins vésiculés) aux conditions physico-chimiques acides (présence et absence d'aluminium)**

Ce projet a pour objectif de vérifier la sensibilité du saumon atlantique (stade de développement : alevins vésiculés) aux conditions physico-chimiques acides susceptibles de se produire au printemps dans les rivières de la Côte Nord (Québec) lors de la fonte des neiges. Durant une période de traitement (pH 5, avec ou sans Al) de 17 jours, et une période de dépuration subséquente de 18 jours, on a suivi l'accumulation de l'aluminium et la survie chez les alevins de saumon. De plus une expérience d'extraction d'aluminium à l'EDTA a été réalisée afin de discriminer entre les quantités d'aluminium adsorbé et absorbé.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$31 137
**START/*DÉBUT*:** *1986 05* **END/FIN:** *1987 05*

## 0605-57

Craig, G
(416) 671-2600
Beak Consultants Ltd.

**Literature review - acute toxicity in municipal sewage effluent**

To estimate the magnitude of acute toxicity problems in municipal STP effluent. To determine the most prevalent chemical parameters causing acute toxicity to aquatic organisms.

Financing/*Financement:* Ontario Ministry of Environment

$40 000

## 0605-58

Craig, W
(613) 225-2447
Paracel Laboratories Ltd.

**Solid phase extraction of triazines and organophosphorus compounds from water**

To determine if the use of solid phase extraction for the extraction of triazines and organophosphorus compounds is an appropriate analytical procedure. To identify which parameters, if any, of the methodology need to be studied further, or optimized, before its adoption as a routine analytical technique.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$52 500
**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

## 0605-59

Crowe, A
(416) 336-4585
Rivers Research Branch; National Water Research Institute; Environment Canada

**Contamination transport in granular aquifers**

To investigate the physical, chemical and biological controls on contaminant transport in granular aquifers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Transport Canada
**START/*DÉBUT*:** *1979 10* **END/FIN:** *ongoing*

## 0605-60

Daniels, S
(416) 336-4768
Research and Applications Branch; National Water Research Institute; Environment Canada

**Electrokinetic and enzymatic detection of sub-cellular toxic and mutagenic effects**

To establish the laboratory capability of electrophoretically detecting nuances of genetic material (DNA). To evaluate the ability of these procedures to detect genetic components produced by selective enzymatic lysis.

Financing/*Financement:* Environment Canada, Conservation and Protection
**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 03*

## 0605-61

Danylewych-May, L
(416) 675-3870
Barringer Magenta Limited

**To develop the GC/MED System as Non GC/MS Screening Technique**

To assess the GC/MED analytical system as a non GC/MS technique for the determination of C, C1, Br, F, P, and S in hazardous waste and its application for the analysis of volatile and non-volatile contaminants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$63 000
**START/*DÉBUT*:** *1986 04* **END/FIN:** *1987 10*

## 0605-62

Davies, R
(403) 220-5275
Department of Biological Sciences; University of Calgary

**Can acridine-orange analysis of neuronal RNA be used to test for chronic toxicity?**

Acradine-orange can be used to estimate RNA synthesis. If RNA synthesis changes, it will have profound effects on the physiology of the animal and hence its fitness. The effects of various perturbatives (oxygen, temperature and salinity stress) will be examined on freshwater invertebrates in terms of changes in RNA synthesis as measured by acra-

dine-orange. Work will be published in referred journals. No final report.

Financing/*Financement:* Natural Sciences & Engineering Research Council

$10 890

**START/*DÉBUT***: *1988 01* ***END/FIN***: *1989 04*

## 0605-63

Davies, R
(403) 220-5275

Department of Biological Sciences; University of Calgary

**Energy allocation in species as a test for chronic toxicity**

Changes in energy allocation to various functions somatic growth, reproductive growth; repiration - active, resting; activity) will have profound effects on fitness as assessed by basic population growth parameters. Using Durstan, a commonly used insecticide, the chronic effects on non-target species of lentic macroinvertebrates will be examined. Work will be published in referred journals with an annual interim report and a final report.

Financing/*Financement:* Natural Sciences & Engineering Research Council

$58 742

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1989 10*

## 0605-64

Day, K
(416) 336-4659

Rivers Research Branch; National Water Research Institute; Environment Canada

**Methods to determine the toxicity, fate and effects of contaminants in stream ecosystems**

To conduct research on the development of laboratory and in situ toxicity tests to determine the effects of ambient concentrations of non-point source contaminants (particularly pesticides) on stream ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

Ontario Ministry of Environment

$400 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1992 03*

## 0605-65

Depew, C
(613) 545-2628

Queen's University; Chemistry Department

**Integral model study of airborne chemical contaminants from chemical plants and research buildings: their detection, identification and a proposed method for their elimination**

To establish an integral model on a total study of some airborne contaminants originated from typical chemical plants and laboratories in Ontario. The model will select two typical classes of air pollutants: nitrogen oxides (inorganics) and substituted aromatic and polyaromatic hydrocarbons (organic). The overall model study involves the establishment of sampling and detection procedures, and the development of a new method for the elimination of the contaminants from air.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$104 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0605-66

Derksen, A
Green, D
(204) 945-7791

Manitoba Dept. of Natural Resources

**Total mercury concentrations in large fishes from lakes on the Churchill R. Diversion and Nelson R.**

To determine mercury bioaccumulation in fish and make recommendations on fish consumption to protect consumers from mercury poisoning. This was one of several projects under the Canada/Manitoba Mercury Agreement. For more information contact M. Morelli one of the steering committee members.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$164 600

**START/*DÉBUT***: *1982 04* ***END/FIN***: *1987 10*

## 0605-67

Dixon, D
(519) 885-1211

University of Waterloo

**Verification studies of a bioconcentration-based model for predicting pulse-exposure toxicity of organic contaminants to fish**

The primary objective of this research is to test the capability of the existing model to predict the acute and sublethal toxicity of organic contaminants to fish across a wide range of pulse-exposure regimes. The ultimate objective of this work is to develop a scientific basis for developing water quality guidelines which are sensitive to pulse and fluctuating toxicant exposures. More specific objectives include: examination of the relationship between toxicant body burdens and biological response (true dose-response) and examination of body size as a modifying factor of toxicokinetics and pulse-exposure toxicity.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$40 200

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 04*

## 0605-68

Dodson, J
(418) 656-3289

Université Laval; Département de biologie

**Bioaccumulation de polychlorobiphényles par la faune aquatique de l'estuaire moyen du Saint-Laurent.**

Puisque les sédiments sont une source potentielle importante de PCB, et que les larves et adultes d'éperlan (Osmerus mordax) et de poulamon (Microgadus tomcod) fréquentent le bouchon de turbidité de l'estuaire moyen, l'objectif de l'étude est de vérifier l'hypothèse voulant que la zone de

turbidité maximale soit une région contribuant à la contamination de ces poissons et donc une source de la contamination de toute la chaîne alimentaire de l'estuaire.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Canada, ministère des Pêches et Océans

## 0605-69

Douglas, G
(613) 957-3137

Health and Welfare Canada; Environmental Health Directorate

**Predictive toxicology (major goal: 2407)**

To conduct toxicity and mutagenicity studies on environmental contaminants.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$773 342

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0605-70

Douglas, G
(613) 957-3137

Health and Welfare Canada; Environmental Health Directorate

**Predictive toxicology (major goal: 2408)**

To develop improved methods for prediction of toxicity and mutagenicity. Validate and implement the recommendations of the Environmental Contaminants Advisory Committee on Mutagenesis for conducting genotoxicity tests.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$1 133 206

**START/*DÉBUT***: *1985 04* **END/*FIN***: *ongoing*

## 0605-71

Dufresne, P
(514) 866-2601

Hydrogeo Canada Inc.

**Développement d'un biofiltre pour contrôler les émissions industrielles dans l'air de solvants organiques volatils**

Rechercher un moyen économique de réduire les émissions atmosphériques de SOV provenant d'imprimeries. Les SOV sont précurseurs d'ozone troposphérique. Rapport final, septembre 1989.

Financing/*Financement:* Ministère des approvisionnements et services

Environnement Canada, Conservation et protection

$65 159

**START/*DÉBUT***: *1989 02* **END/*FIN***: *1989 09*

## 0605-72

Dumontier, M-A
(514) 866-4451

Pâques-Lavalin Environnement

**Inventaire des sources d'hydrocarbures aromatiques polycycliques au Québec**

Evaluer les rejets des sources d'HAP au Québec, identifier les secteurs industriels predominants et les technologie applicables au contrôle de ces sources. Identifier les besoins en R&D, rapport final août 1988.

Financing/*Financement:* Environnement Canada, Conservation et protection

$49 000

**START/*DÉBUT***: *1988 01* **END/*FIN***: *1988 08*

## 0605-73

Dumouchel, A
n. disponible

Eco-Recherches (Canada) Inc.

**Evaluation de différents biotests de toxicité appliqués à des effluents industriels.**

Comparer les approches d'évaluation écotoxicologique québécoise et américaine en les appliquant à dix effluents industriels canadiens ou américains; expliciter les points forts et faibles des deux approches avec une intégration statistique des résultats afin d'optimiser une démarche; formuler subséquemment une clef de choix décisionnels pour les gestionnaires de l'environnement.

Financing/*Financement:* Québec, ministère de l'Environnement

Canada, ministère de l'Environnement

$262 000

**START/*DÉBUT***: *1987* **END/*FIN***: *1990 04*

## 0605-74

Dutka, B
(416) 336-4923

Rivers Research Branch; National Water Research Institute; Environment Canada

**Studies on toxicant activity in river sediments and water column**

Study the spatial distribution of toxicants in sediments and the role they play in, insitu microbial processes. Publish french version of revised methods manual. Provide national and international advice on ecotoxicology-microbiology related to water and sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ministry of State for Science and Technology Biotechnology Program

Environment Canada, Parks

**START/*DÉBUT***: *1988 04* **END/*FIN***: *ongoing*

## 0605-75

Esterby, S
(416) 336-4790

Lakes Research Branch; National Water Research Institute; Environment Canada

**Statistical methods for water quality studies**

Develop spatial/temporal models and methods for censored data (non-detects). Develop methods for modelling spatial components, in monitoring or research data, which will allow the estimation of trends without the variability due to spatial heterogeneity. Application to Great Lakes and regional data, report March 1990. Review and evaluate methods for censored data with application to Niagara River data.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$220 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1993 03*

## 0605-76

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Ozone research**

Conduct research on stratospheric ozone layer, operate ozone monitoring network and apply knowledge to environmental problem of depletion of the ozone layer.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1975 04* **END/FIN:** *ongoing*

## 0605-77

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Investigate the effects of minor constituents on pollution of the stratosphere**

To conduct research on the basic physical processes of the stratosphere emphasizing ozone photochemistry. Apply knowledge to environmental problems.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1974 04* **END/FIN:** *ongoing*

## 0605-78

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Monitoring of the protective ozone layer (MOPOL)**

Research the basic physical processes of the stratosphere with emphasis on ozone photochemistry as pertains to the environmental problem of stratospheric pollution.

Financing/*Financement:* Environment Canada, Atmospheric Environment

**START/*DÉBUT*:** *1983 04* **END/FIN:** *ongoing*

## 0605-79

Evans, W
(416) 739-4624

Environment Canada; Atmospheric Environment Service; Air Quality & Inter-Environmental Research Branch

**Space shuttle flights of the SPEAM and BEAM (Sunphotometer and Brewer Ozone Spectrophotometer)**

Monitor environment from space researching the basic physical processes of the stratospheric, emphasizing ozone photochemistry. Apply this knowledge to environmental problems.

Financing/*Financement:* Industry Science and Technology Canada

**START/*DÉBUT*:** *1984 04* **END/FIN:** *ongoing*

## 0605-80

Filseth, S
Morgan, F
(416) 667-3865

Faculty of Science; York University

**PAH Analysis of Environmental Samples at Low Temperature using Fluroescence Detection**

To develop a method for PAH analysis of environmental samples by Low Temperature Fluroescence Spectroscopy, and to examine the utility of Shpol'skii Spectroscopy for computer based data acquisition and processing in order to identify a selected group of PAH compounds.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Comnmitte

$58 200

**START/*DÉBUT*:** *1985 04*

## 0605-81

Fitt, P
(613) 564-3467

University of Ottawa; Biochemistry

**DNA repair in bacteria subjected to environmental stress**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$113 298

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1991 03*

## 0605-82

Fournier, M
(514) 987-3345

TOXEN; Université du Québec à Montréal

**Immunotoxicologie de l'environnement**

Etude des effets xénobiotiques de l'environnement sur le système immunitaire et sur les conséquences pour la résistance aux infections virales, bactériennes et aux cancers. En parallèle avec ce projet, nous visons à développer des

outils: d'évaluation du potentiel immunotoxique ; de détermination d'indicateurs précoces d'intoxication.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Université du Québec, Programme de développement académique du réseau

Université du Québec à Montréal

$196 000

**START/*DÉBUT*:** *1988 05* **END/FIN:** *1990 04*

## 0605-83

Fournier, M
(514) 282-3345

Université du Québec à Montréal; Département des sciences biologiques

**Immunotoxicologie de l'environnement.**

Etudes des effets de xénobiotiques de l'environnement sur le système immunitaire et sur les conséquences pour la résistance aux infections virales, bactériennes et aux cancers. En parallèle avec l'étude des effets, nous développons des outils d'évaluation du potentiel immunotoxique d'un composé afin d'éprouver les nouveaux produits avant leur dipersion dans l'environnement.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Toxen-Université du Québec à Montréal

$204 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 04*

## 0605-84

Fox, M
(416) 336-4925

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants in Hamilton Harbour and the Bay of Quinte**

Current status and trends of organic contaminants in Hamilton Harbour. Organic contaminant profiles in Bay of Quinte sediment and suspended sediments compared to Lake Ontario profiles.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 10*

## 0605-85

Gagnon, C
(418) 723-6470

Université du Québec à Rimouski; Département d'océanographie

**Adsorption de polluants organiques et inorganiques sur diverses argiles en suspension**

Les argiles dans le milieu marin sont d'excellents adsorbants de polluants. Alors, on déterminera les capacités de quelques argiles à retirer de la phase aqueuse divers polluants organiques et inorganiques. Ensuite il sera intéressant d'évaluer les interactions, entre eux, des divers polluants sur la capacité d'adsorption. Projet de maîtrise.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

$12 500

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1988 12*

## 0605-86

Gehr, R
Soponkanaporn, T
(514) 398-6861

Université McGill; Département de génie civil

**Evaluation of polyelectrolyte behaviour and degradation by size exclusion chromatography (SEC).**

Polyelectrolytes, especially those which are acrymalide based, are widely used in water and wastewater treatment. This project involved the development of a chromatographic method - specifically chromatography - for assessing the molecular weight distribution of high molecular weight, cationic polyelectrolytes. This method was then used to study in particular the effects on the polyelectrolyte of chlorination, ozonation, and biodegradation. The method is now also available for studying changes in the polyelectrolyte through unit treatment processes, and it is hoped it will investigate full-scale applications in the near future. Rapport disponible.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$80 000

**START/*DÉBUT*:** *1985*

## 0605-87

Gignac, L
(403) 492-5516

Botany Department; University of Alberta

**Ecological tolerances and niche structure of Sphagnum along climatic and pollution gradients**

To determine the accumulation and the effects of reduced sulphur and heavy metal deposition on several Sphagnum species. These pollutants were emitted by mining and smelting operations in the Sudbury, Ontario area and a pulp and paper mill in the Prince Rupert, B.C. area. (This report may be obtained from the CEARC).

Financing/*Financement:* Canadian Environmental Assessment Research Council

$5 000

**START/*DÉBUT*:** *1985 05* **END/FIN:** *1986 03*

## 0605-88

Gilbert, R
(613) 545-6034

Geography; Queen's University

**Dispersal of toxic substances in soil and water from an abandoned arctic waste disposal site**

unavailable

Financing/*Financement:* Queen's University

$3 250

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 03*

## 0605-89

Gilman, A
(613) 957-1876

Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2106)**

To assess hazards of arts and crafts materials, hobby kits, and consumer products containing volatile organic solvents and adhesives.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$79 390

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1987 03*

## 0605-90

Gilman, A
(613) 957-1876

Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2107)**

To assess the hazards and estimate the risks of chemical products sold to the general public. To remove especially dangerous chemical products from the marketplace and/or advise CCA on the adequacy of labels on products that are advertised or sold on the Canadian market with respect to the nature and degree of hazard, directions for use and precautionary information.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$505 932

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-91

Gilman, A
(613) 957-1876

Health and Welfare Canada; Environmental Health Directorate

**Product safety (major goal: 2108)**

To provide advice to federal departments and agencies other than CCA on the hazards posed by industrial and consumer chemicals and products.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$239 191

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-92

Girouard, G
(514) 283-4684

Centre Saint-Laurent; Environnement Canada

**Etude de faisabilité sur la récupération des piles au mercure**

Rapport sur la situation de la récupération des piles à l'étrauger et le potential de récupération au Canada.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

$30 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1988 03*

## 0605-93

Goldner, M
Wyndman, C
(416) 978-2755

Department of Microbiology; University of Toronto

**Degradation of Organic Contaminants by Anaerobic Bacteria in Lake Ontario Sediments**

1. To determine whether anaerobic bacteria in Lake Ontario sediments can degrade xenobiotics (simple and more complex) using slurry enrichments and sediment/water cores. 2. To correlate breakdown rates with cell density in small cores from various locations on Lake Ontario. 3. To enrich, isolate and characterize bacteria in a degredative consortium. 4. To fit rates and bacterial counts to a model in order to predict, within limits, the fate of specific contaminants in situ.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$94 800

**START/*DÉBUT*:** *1985 06*

## 0605-94

Goodwin, L
Dieken, F
(403) 632-6761

Alberta Environmental Centre

**Determination of sulfide and other reduced sulfur compounds in biosamples**

To investigate sulfide residues in poisoned tissues and blood for postmortem, neurological and toxicological purposes. To study the metabolism and fate of sulfide in biological systems after subacute and acute exposures to hydrogen sulfide.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1990 01*

## 0605-95

Grove, G
(306) 975-5741

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Groundwater technology transfer**

To undertake field and/or office investigations with emphasis on specific problems related to the transfer of groundwater technology developed by research studies in the Division. To provide advice and assess the technical soundness of the groundwater component of external investigations.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0605-96

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Biodégradation des cyanures dans les environnements miniers.**

Sélection et adaptation de souches bactériennes indigènes à la dégradation des cyanures des effluents de mines d'or.

Financing/*Financement:* Fonds personnel

## 0605-97

Guay, R
(418) 656-5795
Université Laval; Département de microbiologie

**Inhibition de la production microbienne d'acide sulfurique dans les environnements miniers.**

Empêcher la génération biologique d'acides minéraux forts à partir de l'oxydation des sulfures métalliques (pyrite, pyrrhotine) dans les stériles et rejets miniers. Etude de l'adhérence bactérienne aux surfaces minérales.

Financing/*Financement:* Fonds personnel

## 0605-98

Guidotti, T
(403) 492-6291
University of Alberta; Faculty of Medicine; Occupational Health Program

**Impact on a community of misperceived cancer risk**

1. To determine impact on a community with a normal risk profile the effect of a false report that cancer incidence was elevated. 2. To minimize the effect of this mistake on the community. 3. To analyse implications for understanding behavioural changes in response to perceived threat. Preliminary report available.

Financing/*Financement:* Alberta Community and Occupational Health

## 0605-99

Gutteridge, B
Osborne, J
(416) 235-6001
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of volatile organic compounds (MISA test groups 16, 17, 18) in municipal sewage sludge**

To develop method for the analysis of volatile organic compounds in municipal sewage sludge.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0605-100

Halfon, E
(416) 336-4917
Lakes Research Branch; National Water Research Institute; Environment Canada

**Modelling the fate of contaminants in Lake Ontario in the Toronto waterfront area - environmental simulation**

Finish work on modelling toxic contaminants in the Toronto waterfront, report due in the fall of 1989. Model of toxic contaminants in Lake Ontario. Continue work on the development of an expert system for ranking, this requires assistance of contract computer programmers.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment, Municipal Industrial Strategy for Abatement

Great Lakes Water Quality

$200 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1990 03*

## 0605-101

Hall, E
(416) 336-4715
Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Biological treatment of pulp and paper wastewater**

Develop and demonstrate biological treatment technologies for reducing BOD, aquatic toxicity, and organochlorines in pulp and paper wastewaters. Reports available from E. Hall.

Financing/*Financement:* Ontario Ministry of Environment

Environment Canada, Conservation & Protection

Ministry of State for Science & Technology Biotechnology Program

Panel on Energy Research & Development

$388 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

## 0605-102

Hall, E
(416) 336-4715
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**PAPRICAN - WTC anaerobic treatment study**

Assess anaerobic treatability and toxicity reduction for TMP effluent after whitewater system closure.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

Pulp and Paper Research Institute of Canada

$290 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 04*

## 0605-103

Hall, E
(416) 336-4715

Environment Canada; Conservation & Protection; Wastewater Technology Centre

**Anaerobic treatment of complex industrial wastewaters**

Develop anaerobic treatment technology for application to toxic and inhibitory industrial wastewaters. Reports available from E. Hall.

Financing/*Financement:* Environment Canada, Conservation and Protection

Panel on Energy Research and Development

Ontario Ministry of Environment

Ministry of State for Science and Technology Biotechnology Program

$1 057 000

**START/*DÉBUT*:** *1984 00* **END/*FIN*:** *1989 03*

## 0605-104

Hallman, E
Lamonthe, E
(705) 675-1151

Laurentian University; Physics and Astronomy

**Radioisotope activities in vegetation from uranium mining areas by alpha spectroscopy**

To survey the use of mosses and lichens in monitoring the presence of radioisotopes near uranium mining and milling operations. M.Sc. Thesis available.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Laurentian University Research Fund

$6 500

**START/*DÉBUT*:** *1983 09* **END/*FIN*:** *1986 07*

## 0605-105

Hamblin, P
(416) 336-4921

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment dynamics of St. Lawrence River estuary**

To determine transport and fate of contaminated sediments in the St. Lawrence River estuary.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT*:** *1988 04* **END/*FIN*:** *1993 03*

## 0605-106

Hammond, B
(403) 427-3943

Alberta Environment

**Federal-provincial decommissioning workshop recommendations**

To provide the recommendations from the decommissioning workshop, which reviewed contaminant issues arising out of industrial site decommissioning.

Financing/*Financement:* Alberta Environment

$5 000

**START/*DÉBUT*:** *1987 03* **END/*FIN*:** *1987 03*

## 0605-107

Hanna, M
(416) 336-4780

Lakes Research Branch; National Water Research Institute; Environment Canada

**Use of mussels as biosensors for contaminants in the St. Lawrence River**

Survey and assess the contamination (contaminant levels, sources, bioavailability and persistence) and health of native mussels in the St. Lawrence River between Lake St. Louis and Tadoussac. Exploit the data obtained from the various indicators of mussel health in order to recommend standardized procedures for establishing a biomonitoring network.

Financing/*Financement:* Environment Canada, Conservation and Protection

$40 000

**START/*DÉBUT*:** *1989 02* **END/*FIN*:** *1992 03*

## 0605-108

Harrison, J
(306) 780-6390

Environment Canada; Conservation and Protection; Environmental Protection

**Landfarming of oily waste**

To investigate the viability of applying oily waste from heavy oil to agricultural land. The addition of oily waste leads to improved agricultural land.

Financing/*Financement:* Environment Canada, Conservation and Protection

Agriculture Canada

$380 000

**START/*DÉBUT*:** *1985 06* **END/*FIN*:** *1991 06*

## 0605-109

Hay, D
(819) 953-1109

Environment Canada; Conservation & Protection; Industrial Programs Branch

**National Incinerator Testing and Evaluation Program (NITEP)**

Evaluation of energy from waste combustion and emission control technologies from an energy and environmental perspective. Development of guidelines.

Financing/*Financement:* Environment Canada, Conservation and Protection

Energy, Mines and Resources Canada

Department of Supply and Services Canada

Communitié urbaine de Québec

United States Environmental Protection Agency

$9 500 000
**START/*DÉBUT***: *1983 11* ***END/FIN***: *1990 11*

## 0605-110

Hayes, M
Ferguson, H
(519) 823-8800

Department of Pathology; University of Guelph

**The significance of neoplasia in wild fish populations**

To determine the role of environmental pollutants on the pathogenesis of skin and liver tumors in bottom dwelling fish in Lake Ontario and other polluted regions of the Great Lakes. To determine the relationship between carcinogen susceptibility of affected and non affected fish, with carcinogen susceptibility of terrestrial mammals.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

Natural Sciences & Engineering Research Council
**START/*DÉBUT***: *1985*

## 0605-111

Hebert, P
unavailable

Great Lakes Institute; University of Windsor

**Monitoring exposure and effects of organic substances in the Huron-Erie corridor**

To establish protocols for a statistically sound network of biomonitoring stations in the Huron-Erie corridor. To determine foodweb exposure routes (water or in-place pollutants). To calibrate organisms of both the benthic and pelagic food chains in order to determine water and sediment concentrations. To determine if bioaccumulation or bioconcentration regulates residue levels in sport fish. To establish vertebrate monitors to assess the impact of contaminants in the Huron-Erie corridor.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$600 000
**START/*DÉBUT***: *1988 08* ***END/FIN***: *1991 07*

## 0605-112

Hebert, P
Haffner, D
(519) 253-4232

Great Lakes Institute; University of Windsor

**Biological monitoring of organic contaminants in Lake St. Clair and the St. Clair River**

To develop and verify biomonitoring techniques for freshwater mussels, mayflies and macrophytes.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

Wildlife Toxicology Fund

$400 000
**START/*DÉBUT***: *1986 05* ***END/FIN***: *1989 05*

## 0605-113

Hecky, R
(204) 983-5000

Fisheries and Oceans Canada

**Mercury limnological survey**

Following reports completed: 1) Evolution of limnological conditions, microbial methylation of mercury and mercury concentrations in fish in reservoirs of northern Manitoba, 2) Limnological data for southern Indian Lake and Notigi reservoirs, 3) Enhancement of mercury bioaccumulation in fish by flooded terrestrial materials in experimental ecosystems, 4) Mercury bioaccumulation in yellow perch in limnocorrals simulating the effects of reservoir formation.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$210 500
**START/*DÉBUT***: *1983 04* ***END/FIN***: *1987 10*

## 0605-114

Heddle, J
(416) 667-3053

Department of Biology; York University

**Mutagenicity of Complex Mixtures of Polycyclic Aromatic Hydrocarbons in Ambient Air Particulates**

To study mutagenic and carcinogenic potential of polyaromatic hydrocarbons in ambient air particulate matter and to determine the hazard and mutagenic risk of their mixture.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$207 600
**START/*DÉBUT***: *1985 10* ***END/FIN***: *1987 09*

## 0605-115

Hendren, F
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluate the levels of VOC, semi-VOC and trace metals from the exhaust of light duty passenger cars in city, urban and highway driving conditions.**

To investigate the contribution of vehicle exhaust to the levels of toxic compounds in city and urban areas in Canada.

Financing/*Financement:* Environment Canada, Conservation & Protection

$10 000
**START/*DÉBUT***: *1989 03* ***END/FIN***: *1989 09*

## 0605-116

Hendren, F
Barton, P
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluate volatile organic compounds (VOC) emission levels from vehicles operating in cold weather conditions**

To determine the levels of VOC emitted from the Canadian light duty passenger car fleet for inventory purposes.

Financing/*Financement:* Environment Canada, Conservation & Protection

$30 000

**START/*DÉBUT*:** *1988 01* **END/FIN:** *1990 04*

## 0605-117

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Evaluation of exhaust emissions from urban buses operating on commercially available diesel fuels and potential alternative fuels.**

To investigate the regulated and non-regulated emissions from buses designed to operate as urban transportation vehicles including potential alternative fuels such as alcohol and CNG.

Financing/*Financement:* Environment Canada, Conservation & Protection

Energy, Mines and Resources Canada

Department of Transport Canada

**START/*DÉBUT*:** *1989 11* **END/FIN:** *1991 07*

## 0605-118

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Exhaust emissions from industrial off-road vehicles. (Pilot project)**

To evaluate the regulated and non-regulated emissions from the exhaust of industrial off-road vehicles operating on standard duty cycles.

Financing/*Financement:* Environment Canada, Conservation & Protection

$5 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1989 09*

## 0605-119

Hendren, F
Rideout, G
(613) 998-9590

Environment Canada; Conservation & Protection; Vehicle Emissions Testing Lab

**Characterization of exhaust emissions from diesel vehicles operating on 1990's diesel fuel based on tar sands oil.**

To investigate and compare the exhaust emissions from existing commercially available diesel fuel to a diesel fuel made from the tar sands oil.

Financing/*Financement:* Environment Canada, Conservation & Protection

National Research Council

$6 000

**START/*DÉBUT*:** *1989 05* **END/FIN:** *1989 09*

## 0605-120

Henry, G
Mackay, D
(416) 978-4019

Department of Chemical Engineering; University of Toronto

**The Fate of Hazardous Organic Compounds in Municipal Water Pollution Control Plants**

To develop a model and protocol for the prediction of fate of hazardous organic compounds in municipal water pollution control plants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$60 000

**START/*DÉBUT*:** *1984 07* **END/FIN:** *1987 08*

## 0605-121

Hipfner, J
(416) 235-5856

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Development of Methods for Determination of Electroactive Species by Ion Chromatography**

To develop working methods for the determination of electroactive species such as CN- and S= in environmental samples by ion chromatography.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT*:** *1987 06*

## 0605-122

Hollebone, B
(613) 564-5627

Carleton University

**Adaptation of water preconcentration techniques developed for PCDD analysis to other target organic pollutants**

The ability to preconcentrate large volumes of treated or natural waters in the field for accurate dioxin analysis will be extended to the quantification of other classes of toxic organics in these waters. Three refinements of current technology are required: characterization of the filter capacity, retention of organics, interferences and elution behaviour of filter cartridges. Capacities, interferences and elution recoveries from XAD resins selected for retention of target organics. Optimization of filter-resin combinations in sampler operation or retention and separation of organics in either the solid or aqueous phases of natural water.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$186 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

## 0605-123

Hollebone, B
(613) 564-5627
Carleton University; Department of Chemistry

**Refinement and Testing of a Preconcentration Sampler for Dioxins in Water**

To develop an automated preconcentration water sampler for the analysis of raw and treated water for chlorinated dioxins and dibenzofurans, and to deliver to MOE a final, tested prototype suitable for field work.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$60 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1988 05*

## 0605-124

Hopper, F
(416) 235-5834
Ontario Ministry of Environment; Lab Services Branch; ITC Section

**Flow injection analysis system for ICP/MS**

To develop and evaluate a flow injection system for the Sciex Elan ICP/MS.

Financing/*Financement:* Ontario Ministry of Environment

$53 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1989 11*

## 0605-125

Hopper, F
Hipfner, J
(416) 235-5834
Ontario Ministry of Environment; Lab Services Branch; ITC Section

**Ultratrace metal analysis by ICP-MS using column preconcentration**

To develop and optimize an IC-ICP/MS for select trace elements and to use preconcentration with IC-ICP/MS to reduce detection limits.

Financing/*Financement:* Ontario Ministry of Environment

$41 000

**START/*DÉBUT*:** *1988 11* **END/FIN:** *1989 12*

## 0605-126

Hopper, F
Mo, F
(416) 235-5834
Ontario Ministry of Environment; Lab Services Branch; ITC Section

**Flow injection analysis system**

To develop and evaluate a flow injection system for the JY48 spectrometer.

Financing/*Financement:* Ontario Ministry of Environment

$33 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 01*

## 0605-127

Hopper, F
Quan, E
(416) 235-5834
Ontario Ministry of Environment; Lab Resources Branch; ITC Section

**The application of ICP/MS for the analysis of metals in surface waters**

To assess the feasibility of using ICP/MS for the analysis of surface water samples on a routine basis.

Financing/*Financement:* Ontario Ministry of Environment

$30 000

**START/*DÉBUT*:** *1989 07* **END/FIN:** *1989 12*

## 0605-128

Houston, A
(416) 688-5550
Brock University; Dept. of Biological Science

**Effects of chronic exposure to sublethal levels of heavy metal pollutants on physiological/biochemical activities of freshwater fishes**

Definition of maximal acceptable pollutant concentrations

Financing/*Financement:* Natural Sciences & Engineering Research Council

$36 382

## 0605-129

Howard, H
(416) 284-3336
Division of Physical Sciences; University of Toronto

**Distribution, Origins & Behaviour of Local Shallow Groundwaters Containing High Levels of Chlorides**

1. To determine natural background levels of groundwater contaminants and identify their sources. 2. To determine chemical behaviour of groundwater contaminants, their migration and accumulation rates and to evaluate regional magnitude of the problem.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$80 600

**START/*DÉBUT*:** *1984 10* **END/FIN:** *1987 12*

## 0605-130

Huck, P
(403) 492-4738
University of Alberta; Department of Civil Engineering

**Development of a new process for removal of radium-226 from uranium tailings decants**

The objective of this project is to develop a new fluidized-bed process for the removal of radium-226 from uranium tailings decants. More specific objectives include optimization of the process to achieve an effluent radium-226 activity level of 10 pCi/L (0.37 Bq/L) at bench scale; construction & testing at pilot scale to confirm scale-up & obtain data

for design of a full scale process; and to determine equipment requirements and costs for full scale processes.

Financing/*Financement:* Natural Sciences & Engineering Research Council

Amok Ltd./Cluff Mining

$309 895

**START/*DÉBUT***: *1984 03* **END/*FIN***: *1988 09*

## 0605-131

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Evaluation of alternative drinking water treatment processes at pilot scale by mutagenicity testing**

Specific objectives include: examine alternative drinking water treatment processes (particularily different combinations of oxidants) ; monitor breakthrough of mutagenicity on granular activated carbon & quantification of removal on GAC; assess a yeast assay which may be more sensitive than the commonly used Ames Salmonella typhimurium mutagenicity assay; attempt to make correlations between mutagenicity & other surrogate parameters such as THM, TOX and UV absorbance. Final report to AWWARF.

Financing/*Financement:* American Water Works Association Research Foundation

University of Alberta

City of Edmonton, Alberta

$267 872

**START/*DÉBUT***: *1986 09* **END/*FIN***: *1988 05*

## 0605-132

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Leachability of Radium-226 from barium-radium sulfate sludges**

The objective of this project was to examine the leachability of 226Ra2+ from barium-radium sulfate sludges. The study included an elemental analysis of these sludges, geochemical modelling of the leaching of radium and microbiological experiments to investigate sludge solubilization.

Financing/*Financement:* Department of Supply and Services Canada

$75 000

**START/*DÉBUT***: *1984 03* **END/*FIN***: *1985 09*

## 0605-133

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Computer modelling of adsorption of mutagens on XAD-2 resin**

The objective of this project is to model the adsorption of mutagenic organic compounds in drinking water on XAD-2 resin. This information should facilitate the improved design of XAD-2 sampling programs for mutagenicity and is of significance in that mutagenicity testing is a common biological screen for organic compounds and XAD-2 resin is commonly used for concentrating organics for this type of testing.

Financing/*Financement:* Health and Welfare Canada

$54 168

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1988 05*

## 0605-134

Huck, P
(403) 492-4738

University of Alberta; Department of Civil Engineering

**Computer software to model the performance of carbon adsorbers in a drinking water treatment plant**

The objective of this project is to monitor and model the first full-scale application of granular activated carbon at a major Canadian drinking water treatment plant (Buffalo Pond, Saskatchewan. Serving cities of Regina and Moose Jaw). Computer adsorption models developed by Dr. J.C. Crittenden (Michigan Technological University) are being used.

Financing/*Financement:* Health and Welfare Canada

$77 578

**START/*DÉBUT***: *1985 10* **END/*FIN***: *1988 03*

## 0605-135

Huck, P
(403) 492-4738

University of Alberta; Department of Engineering

**Chemical and biological evaluation of drinking water treatment alternatives**

The objective of this study was to use biological testing in parallel with chemical identification to assess reaction products formed by the addition of the disinfectants chlorine, chloramines, chlorine dioxide and ozone during drinking water treatment. The Ames Salmonella assay was used to detect mutagenicity, and compound identification was accomplished by gas chromatography/mass spectrometry.

Financing/*Financement:* Health & Welfare Canada

$288 295

**START/*DÉBUT***: *1984 09* **END/*FIN***: *1986 08*

## 0605-136

Hummel, M
(416) 923-8173

World Wildlife Fund Canada

**Wildlife toxicology fund projects**

Wildlife Toxicology Fund Projects (WFT) was established on June 4, 1985 through a Memorandum of Understanding between Environment Canada and World Wildlife Fund Canada. Its purpose is to provide high quality scientific information that can be directly applied to the protection of Wildlife in Canada from irreversible harm caused by toxic chemicals in the environment, and to enhance and develop private sector expertise, and to act as stimulus for the joint funding of reseach projects. The objective of this proposal is to contribute $50, 000 per year for up to three years to the World Wildlife Fund to fund on a cost shared basis, projects which have been recommended for approval and cost sharing by WWF.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$150 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0605-137

Jackson, T
(306) 975-5766

Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Effects of toxic pollutants on microbial communities**

Complete the current experimental microbiology project involving sediments from Flin Flon area and Northern Manitoba. Perform a new experimental study of inhibitory and stimulatory effects of heavy metals (copper, cadmium, zinc) and selenium on microbial activities (including mercury transformations) in sediments, with emphasis on synergistic and antagonistic interactions (i.e. increases and decreases in toxic effects resulting from exposure of microbes to mixtures of contaminants). Collect field samples from lake(s) near Flin Flon in late summer, and then perform and complete a series of experiments.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1986* ***END/FIN***: *1990*

## 0605-138

Jacobs, H
(416) 979-5000

Ryerson Polytechnical Institute

**Relic waste sites in the City of Toronto**

To identify and map the threat posed by historical waste disposal practices to elementary schools. Presentations of results to Public Health Committee and to School Boards.

Financing/*Financement:* Toronto (City of) Environmental Protection Office

**START/*DÉBUT***: *1989 02* ***END/FIN***: *1989 04*

## 0605-139

Jenkins, S
(416) 235-5902

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Investigation of Volatiles Loss/Degradation in Fish/ Sediment During Storage**

To determine volatile organics loss in prepared fish tissue and sediment, stored at sub-0 (degree) C temperature over various time periods.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$29 000

**START/*DÉBUT***: *1987 07*

## 0605-140

Johnson, N
(416) 822-4111

ORTECH International

**Development and evaluation of a gas and particle (GAP) sampler for semi-volatile chlorinated organic compounds in ambient air**

A multiphased project to design and develop a molecular diffusion denuder based air sampling system to separate and collect vapour/ particle fractions of airborne semi-volatile organochlorine compounds (eg. PCBs, OC pesticides). Additional phases were conducted to evaluate the performance with replicate measurements at background, urban area and near source locales and to fabricate prototype instruments for use by Environment Canada in determining atmospheric deposition rates of such toxic compounds. Several reports, etc. are avaliable for these studies.

Financing/*Financement:* Environment Canada, Atmospheric Environment

$611 000

**START/*DÉBUT***: *1984 09* ***END/FIN***: *1989 08*

## 0605-141

Johnston, L
(306) 975-5745

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Facility for indoor aquifer testing (FIAT)**

To investigate the behaviour of atmospheric fluidized bed combustion wastes under simulated disposal conditions using the FIAT, in particular contaminant migration towards the water-table under climatic conditions present at the disposal site. To assess the effect of piezometer installation on groundwater chemistry. To assess the feasibility of using the FIAT to study pesticide migration and microbial activity in groundwater.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0605-142

Joshi, S
(416) 336-4573

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sedimentary transport of radionuclides in the Great Lakes with special reference to Lake Ontario**

To investigate the role of suspended sediment in the transport of radionuclides in Lake Ontario; investigate the influence of AECL-derived radionuclides on Ottawa River/St. Lawrence River; characterize and inventory the sedimentary radionuclide reservoir.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0605-143

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Structure activity relationships of contaminants**

Determine toxicity data (microtox) of contaminants and develop structure activity equations.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0605-144

Kaiser, K
(416) 336-4756

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants in Great Lakes system**

To identify sources, pathways and sinks of organic trace contaminants in Great Lakes system including St. Lawrence estuary.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$750 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1993 03*

## 0605-145

Kalff, J
Leggett, W
(514) 398-6467

Université McGill; Département de biologie

**Modelling limnological responses to the loading of nutrients and contaminants**

The limnological parameters that are studied include pelagical phyto and zooplankton biomass and size structure, the biomass of submerged macrophytes, abundance, sediment and planktonic bacteria, biomass and size-structure of zoobenthos, growth, biomass, size-structure and species composition of littoral fishes. These parameters are being studied in relation to nutrients, and in addition, are investigating the accumulation of a wide variety of heavy metal and organic contaminants in these limnological communities.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Donner

$385 050

## 0605-146

Kalff, J
Peters, R
(514) 398-6465

Université McGill; Centre de recherche en limnologie

**La modélisation de la réponse des lacs et rivières à l'apport de contaminants; analyse de la génotoxicité de l'eau et des sédiments.**

Examiner l'apport de contaminants (métaux lourds et BPC en particulier) aux lacs et à leurs bassins versants, leur transport, l'association entre la matière organique les sédiments et les contaminants et l'accumulation dans les différents niveaux trophiques. Trois autres recherches portent sur l'analyse de la génotoxicité de l'eau et des sédiments: le développement de relations quantitatives entre structure et activité afin de prédire la bioaccumulation de contaminants, les processus affectant l'acidification des lacs et l'effet de l'acidification sur leurs communautés biologiques.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$270 000

## 0605-147

Karasek, F
(519) 885-1211

University of Waterloo; Department of Chemistry

**Development of Liquid Crystal Capillary Columns for Analysis of Polychlorinated Dioxins and Furans**

Under this project, work will be undertaken to develop the selective liquid crystal phases and fabricate capillary columns for separation of PCDDs, PCDFs and PAHs in environmental mixtures.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$42 500

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 05*

## 0605-148

Karasek, F
(519) 885-1211

University of Waterloo; Department of Chemistry

**Procedure for the 2, 3, 7, 8-Subsituted Analysis of PCDD, PCDF and other Target Compounds**

The present method of analysis of PCDD and PCDF does not provide sufficient separation of the most toxic isomers of these compounds. This proposal will utilize a two-step high performance liquid chromatographic fractionation to replace the present multi-step liquid chromatographic procedure. Once the method has been optimized to separate quantitatively the 2, 3, 7, 8-substituted isomers, it will also provide simultaneous determination of a wide variety of other organic pollutants.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$92 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 05*

## 0605-149

Karr, K
(819) 953-1125

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Compatibility of fibreglass reinforced plastic resins with new liquid fuels**

Determine protocols for testing resins with various fuels (such as alcohol blends). Determine the compatibility of re-

sins with various fuels and amend fibreglass reinforced plastics tank design codes accordingly.

Financing/*Financement:* Panel on Energy Research and Development

Petroleum Association for Conservation of Canadian Environment

$30 000

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1990 09*

## 0605-150

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Toxicity of Pentachlorophenol to Zooplankton: Fate and Effects**

To examine: 1. Bioconcentration and bioaccumulation of PCPs in Zooplankton using 14C-labelled PCP; 2. Interaction of pH with PCP toxicity and bioavailability; 3. Effect of temperature on PCP toxicity 4. Toxicity tests then may be carried out under field conditions using limnocorrals.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$15 100

**START/*DÉBUT***: *1986 05*

## 0605-151

Kaushik, N
(519) 824-4120

Department of Environmental Biology; University of Guelph

**Effects of microencapsulated & EC permethrin, & a new generation synthetic pyrethroid, SAN 811-1**

To determine effects of synthetic pyrethroids on stream invertebrates.

Financing/*Financement:* Ontario Ministry of Environment, Ontario Pesticides Advisory Committee

$29 200

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 04*

## 0605-152

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Investigation of mobile chemical spill treatment technologies on a contaminated landfill**

Technologies including microfiltration, reverse osmosis, enhanced oxidation, steam stripping and butane stripping will be tested in series and alone for their applicability on treatment of contaminated water.

Financing/*Financement:* Environment Canada, Conservation & Protection

$60 000

**START/*DÉBUT***: *1990 04* ***END/FIN***: *1990 06*

## 0605-153

Keller, L
(613) 991-1841

Environment Canada; Conservation and Protection; River Road Environmental Technology Centre

**Development of a mobile water decontamination facility based on rayox enhanced oxidation technology**

Design and construction of a mobile chemical spill treatment unit capable of destroying organic compounds.

Financing/*Financement:* Environment Canada, Conservation & Protection

Department of Supply & Services Canada

$179 000

**START/*DÉBUT***: *1988 12* ***END/FIN***: *1990 11*

## 0605-154

Kenney, B
(306) 975-5769

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Suspended sediment transport**

To develop a cost-effective method for sampling suspended sediments in rivers.

Financing/*Financement:* Environment Canada, Conservation & Protection

## 0605-155

Khalil, M
(418) 724-1759

Université du Québec à Rimouski; Département d'océanographie

**Contamination des harengs du Saint-Laurent par les organochlorés.**

Etude du degré de contamination de différentes populations de harengs dans différentes frayères dans l'estuaire et le golfe du Saint-Laurent.

Financing/*Financement:* Fonds institutionnel de recherche

Fondation UQAR

$15 000

## 0605-156

Kieley, K
Ernst, W
(902) 426-6141

Environment Canada

**Investigation of the use, environmental occurrence, and effects of tri-n-butyltin compounds**

The objectives of this project are threefold: 1) To determine the use pattern of TBT in the Atlantic Region. 2) To determine the environmental occurrence and possible bioaccumulation of TBT residue. 3) To conduct a series of bioassays to determine effects of chronic exposures on selected marine organisms.

Financing/*Financement:* Pesticides Program Funding

$30 000

**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 09*

## 0605-157

Kokta, B
Lavallée, H
(819) 375-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Fabrication de pâtes d'explosion de plusieurs essences de bois**

Evaluer les rejets (polluants) générés par la fabrication d'une nouvelle pâte à papier.

Financing/*Financement:* Québec, ministère de l'Energie et des Ressources

$50 000

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1988 06*

## 0605-158

Krishnappan, B
(416) 336-4766

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fine sediment dynamics including contaminants and biota interactions and modelling of river flows**

Carry out experimental investigations into the transport mechanisms of fine sediments in river systems using the rotating flume and to develop modelling capabilities in the area of river flows and transport of fine sediments and the associated contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1995 03*

## 0605-159

Kucera, E
(204) 945-7088

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Mercury in mink, otter and small mammals from the Churchill River Diversion, Manitoba**

To determine whether there is accumulation of mercury in food chain higher than fish. To determine geographical extent and whether a detectable upward or downward trend in mercury levels is present.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$28 000

**START/*DÉBUT***: *1983 04* **END/*FIN***: *1987 03*

## 0605-160

Kushner, D
(613) 564-2437

University of Ottawa; Biology

**Micro-organisms that live in extreme environments; mechanisms of microbial resistance to toxic substances**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$555 217

**START/*DÉBUT***: *1982 04* **END/*FIN***: *1991 03*

## 0605-161

Kushner, D
(613) 564-2437

University of Ottawa; Biology

**Microbial control of tailings dump leaching**

none given

Financing/*Financement:* Department of Supply & Services Canada

$62 166

**START/*DÉBUT***: *1985 10* **END/*FIN***: *1988 11*

## 0605-162

Kushner, D
Williams, D
(416) 978-5759

University of Toronto

**Control of mosquito larvae by bacterial toxins: search for an algal vector**

Overall objectives: To identify species of algae which should serve as practical vectors of bacterial toxins to mosquito larvae. To carry out an initial field survey of occurrence of algae in mosquito habitats. To set up mosquito feeding stations in 3 or more sites each at 1-2 locations in Ontario to collect eggs from same for subsequent laboratory study of larval feeding behaviour. To study population changes in naturally-occurring and introduced algal species and to determine accompanying changes in mosquito larval populations. To study growth and survival under field conditions of introduced strains of cyanobacteria susceptible to insertion of genetic markers, especially those that determine bacterial toxins, and their ingestion by mosquito larvae.

Financing/*Financement:* Ontario Pesticides Advisory Committee

$18 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1990 03*

## 0605-163

Ladwig, G
Bodnar, J
(416) 235-5982

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of a computer algorithm for the automated identification of PCB aroclors**

To tailor in-house available computer algorithms (SIMCA, TNN) for the statistical recognition of PCB aroclor profiles on an HP-1000 mini-computer.

Financing/*Financement:* Ontario Ministry of Environment

$18 000

**START/*DÉBUT***: *1989 01* **END/*FIN***: *1990 03*

## 0605-164

Ladwig, G
Lega, R
(416) 235-5982

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Sludge analysis (phenols, herbicide acids and base/ neutral compounds)**

To develop method for the analysis of phenols, herbicide acids and base neutral compounds in municipal sludge.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0605-165

Ladwig, G
Lega, R
(416) 235-5982

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for the analysis of OC, CB, and PCBs (MISA test groups 22, 24, and 27) in municipal sewage sludge**

To develop method for the analysis of OC, CB, and PCBs in municipal sewage sludge.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1989 05* ***END/FIN***: *1990 03*

## 0605-166

Lagueux, J
(418) 656-7645

Université Laval; Département de médecine sociale et préventive

**Etude de faisabilité sur le développement d'une stratégie d'évaluation du potentiel génotoxique d'échantillons environnementaux.**

Proposer une stratégie d'évaluation de la génotoxicité des micropolluants de l'environnement par une batterie de bioessais in vitro. Justifier le choix des bioessais et décrire les protocoles. Proposer une méthode de validation en laboratoire des bioessais. Proposer un schéma décisionnel. Développer une stratégie de validation de la batterie par des études de population.

Financing/*Financement:* Québec, ministère de l'Environnement

$15 000

**START/*DÉBUT***: *1987 12* ***END/FIN***: *1988 03*

## 0605-167

Langford, C
(514) 848-4802

Université Concordia; Département de chimie

**Spéciation des métaux lourds et des pesticides dans les eaux naturelles et les sols.**

Modélisation des interactions des pesticides avec les ions métalliques et les substances organiques des sols (substances humiques) ou les hydroxydes de fer.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en genie

## 0605-168

Lau, L
(416) 336-4897

Rivers Research Branch; National Water Research Institute; Environment Canada

**Contaminant/sediment transport in river flows**

Investigate the interactions between river flows and the processes of contaminant and sediment transport and transformation and develop modelling capabilities for these processes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 000 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1997 03*

## 0605-169

Lean, D
(416) 336-4783

Lakes Research Branch; National Water Research Institute; Environment Canada

**Fate of organic contaminants in lake ecosystems**

Determine factors effecting photochemical activity in lake waters. Develop emperical relationships to predict bioconcentration organochlorine contaminants (OCs) in organisms and distribution in lake ecosystems. Measure lipid production and transfer in lakes and relate to bioconcentration.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$650 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0605-170

Lechner, L
(306) 787-6195

Saskatchewan Environment and Public Safety

**Interim target loadings for acidic deposition in western Canada: synthesis of existing information**

To survey the scientific basis of the acidic deposition target loading concept, discuss the selection of parameters on which its application may be used, recommend an approach to determine target loadings and document the availability of data bases for these parameters. A report will be available in Jan. 1988.

Financing/*Financement:* Environment Canada, Conservation and Protection

Saskatchewan Environment and Public Safety

Manitoba Dept. of Environment, Workplace Safety, and Health

Alberta Environment

British Columbia Ministry of Environment and Parks

$50 000
**START/*DÉBUT***: *1985 11* ***END/FIN***: *1988 01*

## 0605-171

Leclerc, A
(418) 545-5070
Université du Québec à Chicoutimi; Dep. des sciences fondamentales

**Evaluation par filtration sur gel de métaux traces associés à la matière organique dissoute de différents poids moléculaires.**

Déterminer la fraction de métaux traces en phase dissoute dans le fjord du Saguenay. Obtenir la distribution de la matière organique dissoute selon le poids moléculaire dans le fjord du Saguenay. Doser les métaux traces associés à la matière organique dissoute en fonction du poids moléculaire de cette matière.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie
$30 000
**START/*DÉBUT***: *1987 05* ***END/FIN***: *1988 05*

## 0605-172

Lee, B
(416) 336-4755
Research and Applications Branch; National Water Research Institute; Environment Canada

**Analysis of phthalic acid and esters (PAE's) in sediment extracts**

To develop an HPLC-ECD method for the analysis of PAE's in sediment extracts. The method should perform the clean-up, fractionation and quantitation of the sediment PAE's simultaneously. The method should be simpler, less time consuming and reduce background contamination problems.

Financing/*Financement:* Environment Canada, Conservation and Protection
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 04*

## 0605-173

Lee, H
(416) 336-4755
Research and Applications Branch; National Water Research Institute; Environment Canada

**Identification and determination of toxic organics in pulp and paper industry effluents**

Develop method for the determination of selected resin acids found in pulp and paper effluents. Identify the toxic or major chlorinated fatty acids and neutrals in effluents by GC-MSD and/or GC-MS-MS techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection
**START/*DÉBUT***: *1989 04* ***END/FIN***: *ongoing*

## 0605-174

Lee-Ruff, E
(416) 736-2100
Department of Chemistry; York University

**Syntheses of Oxygen and Sulphur PAHs of Interest in Environmental Pollution and Toxicology**

To prepare polynuclear aromatic hydrocarbon compounds for use as chemical standards in the analysis of air particulate matter.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee
$33 500
**START/*DÉBUT***: *1984 08* ***END/FIN***: *1987 05*

## 0605-175

Lee-Ruff, E
(416) 736-2100
York University; Department of Chemistry

**Preparation of Heterocyclic Polynuclear Aromatic Hydrocarbons for Analytical Standards**

To prepare specific thiophene and carbazole PAH's that are related to mutagenic carbocyclic analogues for reference standards in environmental analysis. Once these compounds are synthesized the second portion of the project will be to monitor the fate of these compounds under simulated environmental oxidations, providing information on their relative stability.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee
$48 000
**START/*DÉBUT***: *1987 04*

## 0605-176

Lega, R
(416) 235-5756
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Broad range screening method for phenol speciation/ chlorinated guaicols in sediments**

To develop an analytical method for the analysis of a broad range of phenols, catechols and guaicols in a sediment matrix.

Financing/*Financement:* Ontario Ministry of Environment
$25 000
**START/*DÉBUT***: *1989 12* ***END/FIN***: *1990 03*

## 0605-177

Lega, R
(416) 235-5756
Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Routine method for the analysis of resin and fatty acids in sediments**

To provide a routine method for the analysis of resin and fatty acids in sediments, targeting parameters required for MISA pulp and paper analysis.

Financing/*Financement:* Ontario Ministry of Environment

$25 000
**START/*DÉBUT***: *1989 09* ***END/FIN***: *1990 03*

## 0605-178

Lega, R
(416) 235-5756

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Broad Range Screening Method for Phenol Speciation**

To provide a gas chromatographic analytical method for the analyses of a broad range of phenols, catechols, guaicols found in the Pulp and Paper Industry effluents.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$21 000

## 0605-179

Leppard, G
(416) 336-4787

Lakes Research Branch; National Water Research Institute; Environment Canada

**Colloid/phosphate/contaminant interactions**

To investigate interactions between algal-produced colloids, nutrients and contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

## 0605-180

Lesage, S
(416) 336-4597

Rivers Research Branch; National Water Research Institute; Environment Canada

**Toxic chemicals in groundwater**

Study the occurence and fate of toxic organic chemicals in groundwater. Performance Indicators: analysis and occurence of semi-volatile organic compounds in groundwater, submit MS to journal by Dec. 1989; groundwater quality beneath Sarnia, submit MS to journal by Sept. 1989; and develop capability to conduct anoxic biotransformation experiments at CCIW by March, 1990.

Financing/*Financement:* Environment Canada, Conservation and Protection

Ontario Ministry of Environment Research Advisory Committee

$72 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *ongoing*

## 0605-181

Leung, P
(613) 991-9456

Environment Canada; Conservation & Protection; River Road Environmental Technology Centre

**Hazardous waste incineration technology development**

To develop thermal decomposition profiles for candidate chemicals for incineration.

Financing/*Financement:* Environment Canada, Conservation and Protection

$85 000

**START/*DÉBUT***: *1987* ***END/FIN***: *ongoing*

## 0605-182

Liu, D
(416) 336-4576

Rivers Research Branch; National Water Research Institute; Environment Canada

**Photo and biological degradations of contaminants in the Athabasca River system**

To systematically investigate the photo and biological degradations of selected priority contaminants (PAHs/PANHs) in the Athabasca River systems, with the emphasis on degradation/transformation mechanism, metabolites and pathways.

Financing/*Financement:* Environment Canada, Conservation and Protection

$350 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1992 03*

## 0605-183

Lo, S
(819) 376-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Cuisson en phase vapeur de feuillus et d'essences à croissance rapide avec et sans recyclage de la liqueur résiduelle d'imprégnation.**

Réduire la pollution des rejets aqueux. Réduire la consommation d'énergie.

Financing/*Financement:* Québec, ministère de l'Enseignement supérieur et de la Science

$45 000

## 0605-184

Lo, S
(819) 375-5075

Université du Québec à Trois-Rivières; Centre recherche pâtes et papier

**Evaluation du niveau de la pollution de l'eau provenant de la fabrication de la pâte PCM et de la pâte PCTM.**

Quantifier les polluants conventionnels de ces nouvelles pâtes.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$45 000

## 0605-185

Loranger, S
(514) 251-0125

Groupe recherche en biostatistique de l'Environnement: G.R.E.B.E. Inc.

**Analyse statistique des données de caractérisation des lieux d'élimination des déchets.**

Analyser sur une base statistique les données hydrogéologiques, physico-chimiques, et biologiques des lieux canadiens d'élimination de déchets où l'on retrouve des substances toxiques afin de: porter un jugement sur la représentativité de ces dernières et l'usage qu'il peut en être fait; identifier des paramètres pouvant servir d'indicateurs du comportement d'un ensemble de substances ou de l'état de dégradation d'un site pour en faciliter le suivi. Un système de gestion des données de ces sites sera développé.

Financing/*Financement:* Canada, Approvisionnement et Services, Environnement

Québec, ministère de l'Environnement

$43 560

**START/*DÉBUT***: *1988 10* **END/*FIN***: *1989 12*

## 0605-186

Lum, K
(416) 336-4617

Rivers Research Branch; National Water Research Institute; Environment Canada

**Assessment and modelling of contaminants with special reference to the Athabasca River**

Determine the significance of abiotic factors (particle composition, speciation and surface characteristics) in influencing contaminant bioavailability, transport and fluxes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$400 000

**START/*DÉBUT***: *1989 04* **END/*FIN***: *1993 03*

## 0605-187

Lundahl, P
(514) 866-4451

Lavalin Environnement Inc.

**Inventaire des sources d'hydrocarbures aromatiques polycycliques au Québec**

Revue de littérature, intégration des bases de données des rejets atmosphériques, hydriques et des déchets, évaluation des rejets de HAP à l'environnement. Rapport final disponible, janvier 1989 (français ou anglais).

Financing/*Financement:* Environnement Canada, Conservation et protection

$56 500

**START/*DÉBUT***: *1988 01* **END/*FIN***: *1988 12*

## 0605-188

Luniewski, R
(416) 235-6000

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Development of method for analysis of chlorophenols, PCBs, PAH, and CB in stack samples**

To develop a methodology that would be suitable for the organics CB/ PCB/PAH/CP, as well as dioxins. To develop a methodology that would minimize the dilution factors of each sample.

Financing/*Financement:* Ontario Ministry of Environment

$78 000

**START/*DÉBUT***: *1987 11* **END/*FIN***: *1990 03*

## 0605-189

Mackay, D
(416) 978-4019

University of Toronto; Institute for Environmental Studies

**Biosorption, bioaccumulation and food chain transfer of organic chemicals**

To review state-of-the-art research with respect to biosorption and bioaccumulation in order to enhance predictive food chain modelling.

Financing/*Financement:* Ontario Ministry of Environment

$17 500

## 0605-190

MacKay, D
(416) 978-4019

University of Toronto; Institute for Environmental Studies

**Chemical exposure pathways in Ontario**

Establish correspondence between output of environmental model and prevailing concentrations in Ontario. Establish a range of air inhalation and water and food consumption rates for a typical family in Southern Ontario. Develop correlations between concentrations in the environment and those in vegetation, fruit, meat, and dairy products. Quantify human exposure through ambient air, food, and water. Extend assessment to estimation of human physiological fate to chemicals through further development of existing pharmacokinetic model. Validation of these of models. Output: 'Modelling the distribution of organic chemicals in plants', proceedings of Intermedia Pollutant Transport: Modelling and Field Measurements, UCLA, Aug. 23-6, 1988. See inventory of R&D projects for more listings.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$136 500

**START/*DÉBUT***: *1988 07* **END/*FIN***: *1991 06*

## 0605-191

Mackay, D
(416) 978-4019

Institute for Environmental Studies; University of Toronto

**Studies of environmental fate, effects and modelling of contaminants in the environment**

To gather and correlate physical-chemical data, measure transport rates in the environment and assemble mathematical models of contaminant behaviour as they migrate between air, water, soils and sediments.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

Natural Sciences & Engineering Research Council

**START/*DÉBUT***: *1972 00*

## 0605-192

Mackay, D
(416) 978-4019

Department of Chemical Engineering; University of Toronto

**Predictive organic contaminant structure-property-toxic relationships for aquatic organisms**

To develop methods to correlate organic contaminant structure to its physical properties, organism uptake rates and toxic effects.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$57 000

**START/*DÉBUT***: *1984 07* ***END/FIN***: *1986 05*

## 0605-193

Mackay, D
(416) 978-4019

Department of Chemical Engineering & Applied Chemistry; University of Toronto

**Multi-media environmental and human exposure assessment of organic contaminants**

To develop the capability of predicting spatial variations of chemical concentrations of selected hazardous substances in the environment from known mean values. Validate the statistical distributions monitoring data obtained for Southern Ontario. Link these environmental concentrations with an exposure assessment model to determine total amounts available to humans through air inhalation, diet & drinking water to identify dominant exposure routes, developing integrated multi-media guidelines.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$116 800

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1988 06*

## 0605-194

Maguire, R
(416) 336-4776

Rivers Research Branch; National Water Research Institute; Environment Canada

**Fate of pesticides and industrial chemicals in the Yamaska River, Quebec**

To finish analyses of water, sediment and biota from the Yamaska River for dyes, chlorinated chemicals and pesticides. To start work on identification of PAHs and related chemicals in effluents from tar sands operations on the Athabasca River, Alberta. Cross-reference with 83013 (J. Metcalfe) and 83015 (K. Day).

Financing/*Financement:* Environment Canada, Conservation and Protection

Pesticides Program Funding

$500 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1990 03*

## 0605-195

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**Air sampling methods for new anti-sapstain chemicals**

To develop sampling methods for ambient air and emissions for two new anti-sapstain chemicals introduced in forest products industry of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$60 000

**START/*DÉBUT***: *1988 05* ***END/FIN***: *1989 05*

## 0605-196

Manna, B
(604) 387-9957

British Columbia Ministry of Environment & Parks

**Impact of residential woodstoves**

To determine the impact of residential wood combustion on air quality in selected communities of B.C.

Financing/*Financement:* British Columbia Ministry of Environment & Parks

$50 000

**START/*DÉBUT***: *1987 10*

## 0605-197

Manning, P
(416) 336-4787

Lakes Research Branch; National Water Research Institute; Environment Canada

**Availability of P, Fe, and Pb in contaminated sediments**

To determine availability of P, Fe, and Pb in contaminated sediments of the Bay of Quinte and in riverine inputs (Trent, Moira) to the Bay.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$250 000

**START/*DÉBUT***: *1987 08* ***END/FIN***: *1991 09*

## 0605-198

Marsalek, J
(416) 336-4899

Rivers Research Branch; National Water Research Institute; Environment Canada

**Nonpoint sources of pollution**

Develop and refine tools for characterization and quantification of nonpoint source pollution in rural and urban areas.

Financing/*Financement:* Environment Canada, Conservation and Protection

$1 500 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1998 03*

## 0605-199

Marsh, P
(306) 975-5752

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Snowmelt run-off in permafrost basins**

To determine the rates of, and processes controlling: melt metamorphism and the vertical flux of water through the snow cover; exchange of water between the snowpack, active layer, and permafrost, and the rate of removal of the snow cover; the lateral movement of meltwater through the snow cover and the active layer to the stream channel; to apply this information modelling large scale snow processes; and study the release of pollutants from arctic snow covers.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0605-200

Mayer, T
(416) 336-4506

Lakes Research Branch; National Water Research Institute; Environment Canada

**Effect of iron and steel mill effluents on reduction of the P-availability in Hamilton Harbour**

Determine whether industrial effluent can be used to remove P from water column, thus determine whether this effluent is beneficial or detrimental to Hamilton Harbour.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$200 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0605-201

McCorquodale, J
(519) 253-4232

University of Windsor

**Model development - food chain component**

To enhance the existing food chain sub-model for incorporation into the WASTOX contaminant fate model.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$95 000

**START/*DÉBUT*:** *1986 07* **END/FIN:** *1990 06*

## 0605-202

McCurvin, D
(416) 235-5892

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Comparison of Mass Spectral Instrumental Capabilities for Dioxin/ Furan Determination**

To compare high resolution MS, Low resolution MS (MSD Finnigan 4500) and MS-MS capability for Dioxin/Furan Determination.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT*:** *1987 04*

## 0605-203

McKerness, L
(204) 945-7033

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Sources and material balance to identify mercury levels within the region covered by the CMMA.**

1) To compile available information on mercury in the environment within the study region including potential point and non-point sources of mercury, 2) To evaluate relative importance of sources, 3) To identify gaps on existing information and recommend additional work. A report is available.

Financing/*Financement:* Canada/Manitoba Mercury Agreement

$21 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1986 03*

## 0605-204

McNutt, B
(416) 525-9140

McMaster University; Department of Geology

**Investigation of the analytical capabilities of the ICP/MS with emphasis on environmental analysis**

To investigate the analytical capabilities of the ICP/MS with emphasis on environmental analysis.

Financing/*Financement:* Ontario Ministry of Environment Laboratory Services Branch

$150 000

**START/*DÉBUT*:** *1987 01* **END/FIN:** *1990 01*

## 0605-205

McQueen, D
(416) 667-2526

Department of Biology; York University

**Bioaccumulation of Mercury by Yellow Perch**

To develop a model for the bioaccumulation of mercury in young-of-the-year yellow perch. The model will be used to explain inter-lake variation in mercury body burdens.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$29 000

**START/*DÉBUT*:** *1985 04* **END/FIN:** *1988 02*

## 0605-206

Melcer, H
(416) 336-4546

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treating wastewaters from upgrading processes**

Assess appropriate pollution abatement technologies or waste management practices for emissions from the CANMET coal co-processor technology. This project has been terminated.

Financing/*Financement:* Panel on Energy Research and Development

Environment Canada, Conservation and Protection

$1 695 200
**START/*DÉBUT***: *1983 04* ***END/FIN***: *1988 03*

## 0605-207

Melcer, H
(416) 336-4546
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Fate of trace contaminants in biological treatment systems**

To determine the manner in which biological wastewater treatment systems dispose of toxic trace contaminants.

Financing/*Financement:* Environment Canada, Conservation and Protection
$412 000
**START/*DÉBUT***: *1984 04* ***END/FIN***: *1989 04*

## 0605-208

Melcer, H
(416) 336-4546
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Biological methods for toxic chemical degradation**

Assess the capability of novel biological reactor systems to remove toxic trace contaminants. This project has been terminated.

Financing/*Financement:* Environment Canada, Conservation and Protection
Department of Supply and Services Canada
Ontario Ministry of Environment
$690 000
**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0605-209

Méranger, J
(613) 957-1870
Health and Welfare Canada; Environmental Health Directorate

**Exposure assessment (major goal: 2605)**

To estimate human exposure to contaminants in the environment.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$691 770
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0605-210

Méranger, J
(613) 957-1870
Health and Welfare Canada; Environmental Health Directorate

**Exposure assessment (major goal: 2607)**

To conduct health effects studies in high risk Canadian populations.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate
$125 614
**START/*DÉBUT***: *1985 04* ***END/FIN***: *ongoing*

## 0605-211

Messing, K
Mergler, D
(514) 282-3334
Université du Québec à Montréal; Département des sciences biologiques

**Approche biologique à l'environnement de travail.**

Dépister les effets précoces des agents ou conditions dans le milieu de travail sur des indicateurs biologiques. Spécifiquement, étudier les effets génétiques de faibles doses de radiations ionisantes, effets neurotoxiques des solvants, effets physiologiques de la chaleur, du froid.

Financing/*Financement:* Institut de recherche en santé et sécurité du travail
$555 000

## 0605-212

Metcalfe, C
(705) 748-1272
Trent University; ERS Program

**Carcinogenicity testing of industrial effluents using a rainbow trout assay**

To develop a carcinogenicity assay using fish which can be used for monitoring of industrial effluents for carcinogenic activity. To fractionate extracts of carcinogenic effluents in order to identify classes of compound which warrant routine monitoring under MISA.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee
$128 700
**START/*DÉBUT***: *1989 05* ***END/FIN***: *1992 04*

## 0605-213

Metcalfe, J
(416) 336-4685
Rivers Research Branch; National Water Research Institute; Environment Canada

**Biomonitoring techniques for contaminants in rivers**

Complete research on the bioaccumulation and ecological/physiological effects of pesticides in aquatic organisms from the Yamaska River, Quebec. Continue research on freshwater mussels as biomonitors in the upper St. Lawrence River. Initiate research on the impact of tar sands operations on fish in the Athabasca River, Alberta.

Financing/*Financement:* Environment Canada, Conservation and Protection
$300 000
**START/*DÉBUT***: *1986 04* ***END/FIN***: *1991 03*

## 0605-214

Michaud, J-R
(514) 866-4451
Lavalin Environnement Inc.

**Etude sur les hydrocarbures aromatiques polycycliques technologies de réduction des émissions et besoins de développement**

Préciser les données d'émissions de HAP provenant de: aluminerais, chaudières à bois, brûleurs coniques, production de carbure de silice, protection du bois au créosote. Et détermination des besoins de développement de nouvelles technologies de réduction des émissions. Rapport final, septembre 1989.

Financing/*Financement:* Environnement Canada, Conservation et protection

$71 375

**START/*DÉBUT***: *1989 03* **END/*FIN***: *1989 09*

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## 0605-215

Mitchell, J
(519) 661-2192

University of Western Ontario; Department of Physics

**Studies into the mechanisms of soot control using metallic fuel additives**

Final report available from J. Mitchell. Objective: To understand soot inhibition so that practical additives can be designed.

Financing/*Financement:* Imperial Oil Company

$20 130

**START/*DÉBUT***: *1984 06* **END/*FIN***: *1987 06*

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## 0605-216

Moon, T
(613) 564-2455

University of Ottawa; Biology

**Development of retinoid monitoring for dioxins and related compounds**

none given

Financing/*Financement:* World Wildlife Fund

$50 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1988 03*

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## 0605-217

Moon, T
(613) 564-2455

University of Ottawa; Biology

**Vitamin A related mechanisms for dioxin toxicity**

none given

Financing/*Financement:* Max Bell Foundation
World Wildlife Fund

$144 645

**START/*DÉBUT***: *1989 01* **END/*FIN***: *1991 12*

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## 0605-218

Moore, J
Coppock, R
(403) 632-6761

Alberta Environmental Centre

**Studies on toxicity evaluation of industrial wastewaters**

To determine the acute toxicity of bleached kraft pulp mill effluent to fish and mammalian species.

Financing/*Financement:* Alberta Environmental Centre

$230 000

**START/*DÉBUT***: *1980 04*

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## 0605-219

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Organic contaminants - water/air**

Assessment of the feasibility of habitat creation at confined disposal facilities as remediation of contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

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## 0605-220

Mudroch, A
(416) 336-4707

Lakes Research Branch; National Water Research Institute; Environment Canada

**Behaviour of in-situ sediment contaminants**

Evaluation of physio-chemical properties of sediments and their effects on the distribution and mobility of contaminants in aquatic ecosystems.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$700 000

**START/*DÉBUT***: *1987 04* **END/*FIN***: *1992 03*

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## 0605-221

Murthy, C
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**St. Lawrence River loadings and Lake Ontario/Niagara River toxics management**

To conduct physical limnological experiments (six Lagrangian drifter experiments, six current meter moorings, current profiles, etc.) at the main channels of St. Lawrence River and Kingston basin, Lake Ontario. Determine chemical loadings of selected toxic substances entering St. Lawrence River from Lake Ontario using IWD/Ontario Region chemical monitoring data. Analysis of Niagara River plume frontal effects in Lake Ontario - fate and pathways of toxics in Lake Ontario.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$1 100 000

**START/*DÉBUT***: *1986 04* **END/*FIN***: *1996 04*

## 0605-222

Nagy, E
(416) 336-4685

Lakes Research Branch; National Water Research Institute; Environment Canada

**Polynuclear aromatic hydrocarbons (PAHs) in freshwater systems**

To relate PAH compositions in the sediments of known contaminated areas (Hamilton Harbour, St. Lawrence River) to possible sources. Performance Indicators: 1) To complete the analysis of PAHs in Hamilton Harbour sediments, sediment traps and cores. 2) To study PAH profiles in St. Lawrence River sediment samples. 3) Prepare a report on the Hamilton Harbour results.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$420 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1992 03*

## 0605-223

Neary, B
Mierle, G
(705) 766-2418

Limnology Section; Water Resources Branch; Ontario Ministry of Environment

**Huntsville basin contaminant assessment project (inland lakes)**

To determine the cause and extent of severe mercury contamination of fish populations in the lakes surrounding Huntsville. To assess the geographical extent of contaminated fish populations, and to determine the relative concentration of mercury in streams feeding into contaminated lakes.

Financing/*Financement:* Ontario Ministry of Environment Water Resources Branch

$410 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1989 03*

## 0605-224

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of ocean dumping information for active dumpsites on the BC coast from 1979 to 1986**

Updating ocean dumping information (research, monitoring) on the BC coast.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$5 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0605-225

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**Sediment toxicity tests on effects of ocean dumped material on eggs of an important fish species**

1) To assess the toxicity of three different ocean dumped materials on fertilized eggs. 2) To evaluate the effectiveness of 'capping' in reducing toxicity.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$16 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0605-226

Nelson, H
(604) 666-2947

Environment Canada; Conservation and Protection; Environmental Protection

**An assessment of cadmium in marine sediments. A study of high CD levels in Ucluelet Inlet, B.C.**

To distinguish between natural and anthropogenic sources of cadmium in Ucluelet Inlet sediments.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$18 000

**START/*DÉBUT***: *1986 04* ***END/FIN***: *1987 03*

## 0605-227

Nestman, E
(416) 338-6444

Cantox Inc.

**Review of established regulatory policies using genotoxicity tests, current capability, and recommendations for future development**

Review and assess the usage of mutagenicity and genotoxicity test procedures by various regulatory bodies, with specific emphasis on the existing mandate of MOE. To address: current use of genotoxicity testing by governmental and regulatory jurisdictions nationally and internationally; critical review of the applicability of such tests for environmental decision making: compilation of an Index of short-term genotoxicity tests for regulatory decision making; summary of existing MOE testing capabilities; recommendations for future developments and estimates of associated costs for maintaining and developing further testing capabilities in MOE programs; development of an implementation plan of genotoxicity testing in the area of environmental management.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$48 000

**START/*DÉBUT***: *1989 07* ***END/FIN***: *1990 06*

## 0605-228

Nicholaichuk, W
(306) 975-5748

Hydrology Division; National Hydrology Research Institute; Environment Canada

**Herbicide and nutrient loss using low-pressure irrigation systems**

Under conditions of low-pressure irrigation, determine the mobility and degradation of herbicides, pesticides and nu-

trients; the quantity and quality of leachate; and the degradation and leaching characteristics of herbicides, pesticides and nutrients.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0605-229

Nriagu, J
(416) 336-4784

Lakes Research Branch; National Water Research Institute; Environment Canada

**Trace metals in the lower Great Lakes: atmospheric influence**

To evaluate the role of atmospheric inputs and the influence of nutrient elements on the baseline concentrations of trace metals in waters of the lower Great Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$450 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0605-230

Onuska, F
(416) 336-4635

Research and Applications Branch; National Water Research Institute; Environment Canada

**Supercritical fluid extraction and chromatography**

To design, construct, interface, automate and evaluate SFE-GC system. To investigate the application of Ion Mobility Detector for SFE-GC system. To investigate the performance of MS in tandem with SFE.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

## 0605-231

Orchard, I
(416) 973-1089

Environment Canada; Conservation & Protection; Ontario Region

**Study of open water dredging disposal**

Use underwater camera to assess the effectiveness of capping dredged material disposed in open water.

Financing/*Financement:* Environment Canada, Conservation & Protection

$8 000

**START/*DÉBUT*:** *1982 05* **END/FIN:** *1986 09*

## 0605-232

Orchard, I
(416) 973-1089

Environment Canada; Conservation & Protection; Ontario Region

**Sampling protocols**

To develop technical guide for sampling and preserving sediment.

Financing/*Financement:* Environment Canada, Conservation & Protection

Ontario Ministry of Environment

$18 000

**START/*DÉBUT*:** *1985 05* **END/FIN:** *1987 09*

## 0605-233

Orchard, I
(416) 973-1089

Environment Canada; Conservation & Protection; Ontario Region

**Bioassessment**

Wheatley Harbour. A joint DOE/MOE study was initiated in 1986 and continued into the 1987 field season focusing on the biological implications of contaminated sediments. Benthic enumeration studies were undertaken as well as lethal and sub-lethal effects. A report as part of the Remedial Action Plan for Wheatley Harbour will be produced.

Financing/*Financement:* Environment Canada, Conservation & Protection

$25 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *1988 06*

## 0605-234

Ormrod, D
(519) 824-4120

University of Guelph; Dept. of Horticultural Science

**Determination of the dose-responses for tissue contamination and growth of vegetable crops exposed to chronic levels of organic environmental contaminants originating from industrial processes**

To establish bioaccumulation of trichloromethane and phenol through foliar exposure and contamination of the root zone at concentration ranges including ambient standards using radish, lettuce and tomato. To assess the relative importance of foliar and root exposures to bioaccumulation of these compounds in plant tissue, and establish partitioning exposure and tissue accumulation. To assess the phytotoxicity of these compounds by root, foliar and root and foliar exposure. Phytotoxicity will be evaluated by determining dose-response relationships between growth parameters and contaminant concentrations applied to the growing medium.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$46 400

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1991 03*

## 0605-235

Osborne, J
(416) 235-5759

Ontario Ministry of Environment; Lab Services Branch; Toronto Section

**Evaluation of novel tracer compounds for the detection of underground leaks in fuel tanks**

Method evaluation. Implementation for routine operations. Provision of accurate QA/QC data.

Financing/*Financement:* Ontario Ministry of Environment

$50 000

**START/*DÉBUT*:** *1989 01* **END/FIN:** *1991 01*

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## 0605-236

Ouellet, S
(418) 724-1483

Université du Québec; INRS-océanologie

**Détermination des origines et des sources des hydrocarbures dans les sédiments du fjord du Saguenay.**

Analyse des sédiments du Saguenay, afin de quantifier les teneurs en n-alkanes et en HAP. A partir de ces données, évaluer l'état de dégradation de ces composés, de même qu'attribuer des origines et des sources spatio-temporelles de contamination.

Financing/*Financement:* Fonds pour la formation des chercheurs et l'aide à la recherche

Fondation Université du Québec

$15 500

**START/*DÉBUT*:** *1987* **END/FIN:** *1989*

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## 0605-237

Ozburn, G
(807) 343-8467

Lakehead University; Biology Department

**Quantitative structure-activity relationships for organic compounds and their mixtures**

To enhance and refine current Quantitative Structure-Activity Relationship (QSAR) techniques by employing the organic chemical toxicity database at Lakehead University, to develop physiologically and environmentally realistic toxicity models for use by Ont. Ministry of Environment. A final report will be submitted March 31, 1990.

Financing/*Financement:* Ontario Ministry of Environment

$134 932

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1990 03*

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## 0605-238

Ozburn, G
(807) 345-2121

Department of Biology & Aquatic Research Group; Lakehead University

**Toxicity of Mixtures of Organic Chemicals**

To assess the aquatic toxicity of industrial organic substances alone and as mixtures.

Financing/*Financement:* Ontario Ministry of the Environment, Water Resources Branch

$515 700

**START/*DÉBUT*:** *1985 04*

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## 0605-239

Parker, G
(705) 675-1151

Laurentian University; Biology

**Effects of soil acidification and local smelter emissions on the cadmium content of soils, forage and fecal pellets in deer yards of the Sudbury - Manitoulin area**

To determine cadmium levels & pH of the surficial soils in deer yards designated as either geophysically sensitive (non-buffered), metal contaminated and geochemically sensitive (non-buffered, contaminated) or tolerant (buffered) to acid precipitation. To relate cadmium burdens in surficial soils to levels present in major forage species of deer. To identify browse species serving as potential indicators of prevailing cadmium enrichment conditions. To examine the potential of deer fecal pellets as bioindicators of the availability, exposure-level and/or body burden of cadmium. (Report available as of March 30, 1989).

Financing/*Financement:* Ontario Renewable Resources Research Grant

Wildlife Toxicology Fund

Ontario Ministry of Natural Resources

$26 390

**START/*DÉBUT*:** *1986 03* **END/FIN:** *1989 03*

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## 0605-240

Pelletier, E
(418) 724-1764

Université du Québec; INRS-océanologie

**Biodisponibilité et toxicité des composés organométalliques en milieu marin.**

1. Déterminer la spéciation du mercure et du méthylmercure dans les sédiments du fjord du Saguenay. 2. Déterminer la biodisponibilité de plusieurs complexes du mercure chez les organismes benthiques. 3. Déterminer la toxicité sous-léthale de ces composés et les mécanismes de détoxification.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$42 000

**START/*DÉBUT*:** *1986 05* **END/FIN:** *1989 05*

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## 0605-241

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Short-term toxicity (aquatic) of priority chemicals**

Fill data gaps in literature as result of preparation of Enviro-TIPS manuals. Assess the acute toxicity of chemicals on DOE list of priority chemicals - ongoing project.

Financing/*Financement:* Environment Canada, Conservation & Protection

$45 000

**START/*DÉBUT*:** *1986 06* **END/FIN:** *ongoing*

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## 0605-242

Percy, R
(902) 426-2576

Environment Canada; Conservation & Protection; Atlantic Region

**Condensate effects study**

Following a gas well blowout on Scotrain Shelf marine organisms were found to uptake condensates. This study will look at potential tainting effects of condensates on an east coast molluscan species. Reports due in March 1988 & March 1989. PERD No.67238.

Financing/*Financement:* Panel on Energy Research & Development

$50 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1989 03*

## 0605-243

Petranovic, M
Wyhovszky, G
(416) 235-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Chemical Characterization by Fourier Transform Infrared Spectroscopy (FT-IR)**

To adapt, develop and assess spectroscopy techniques in environmental pollution utilizing Fourier Transform Infrared Spectroscopy

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$36 000

**START/*DÉBUT***: *1987 05*

## 0605-244

Petranovic, M
Wyhovszky, G
(416) 235-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Diffuse Reflectance Infrared Fourier Transform Spectroscopy (Drift)**

To establish applications of a new optical sampling device capable of direct examination of solid powders.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$29 000

**START/*DÉBUT***: *1987 05*

## 0605-245

Petranovic, M
Wyhovszky, G
(416) 235-5758

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Introduction of Gas Chromatography Fourier Transform Infrared Spectroscopy for Mixed Waste Analysis**

To combine a powerful separation technique (GC) with a diagnostic analytical instrument (infrared) for identification of volatile organic compounds in mixed wastes.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$60 000

**START/*DÉBUT***: *1987 08*

## 0605-246

Pick, F
(613) 564-6856

University of Ottawa; Biology

**Response of freshwater picoplankton to changes in nutrient loading and organic contaminants**

none given

Financing/*Financement:* Environment Canada, Conservation & Protection

$16 000

**START/*DÉBUT***: *1987 11* ***END/FIN***: *1988 03*

## 0605-247

Pinel-Alloul, B
(514) 343-6784

Université de Montréal; Département des sciences biologiques

**Ecotoxicology of sediment associated pollutants**

L'objectif général de notre projet de recherche est d'analyser la variabilité chimique et écotoxicologique des polluants associés aux sédiments naturels dans la région du lac Saint-Louis. Les composantes physico-chimiques des sédiments (granulométrie) et de l'eau (pH, oxygène dissous, conductivité, éléments nutritifs), ainsi que les composantes toxiques (polluants organiques et inorganiques) des élutriats de sédiments serviront à caractériser les milieux récepteurs. La variabilité écotoxicologique potentielle des milieux sera évaluée en estimant les réponses toxicologiques des organismes et des communautés planctoniques de trois niveaux trophiques et représentatives du milieu.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$91 300

## 0605-248

Pinel-Alloul, B
Methot, G
(514) 343-6190

Université de Montréal; Centre de recherches écologiques de Montréal

**Analyse des communautés biologiques de 54 lacs du Québec, en référence à la morphométrie des lacs et aux niveaux d'acidification naturelle et anthropogène.**

Cette étude a pour but d'analyser les répercussions de l'acidification des milieux sur des composantes biologiques. Nous produirons deux études complémentaires portant plus spécifiquement sur les communautés planctoniques (zooplancton-phytoplancton) dont la structure taxonomique et la répartition des espèces dominantes seront analysées en référence aux facteurs du milieu liés à la morphométrie des lacs et aux niveaux d'acidification naturelle et anthropogène. Ces études seront rédigées sous forme de deux articles scientifiques en collaboration avec les responsables du projet à Pêches et Océans Canada.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

$7 994

**START/*DÉBUT***: *1987 07* ***END/FIN***: *1987 12*

## 0605-249

Pinel-Alloul, B
Methot, G
(514) 343-6190
Université de Montréal; Centre de recherches écologiques de Montréal

**Etude préliminaire d'impact sur le projet de dragage de sable dans les secteurs de Sandy Hook et de l'île de l'Est aux îles de la Madeleine, Québec.**

L'étude d'impact produite par le CREM a pour but 1) de décrire les caractéristiques physiques et biologiques de la zone à draguer et de la zone d'influence 2) d'identifier et d'évaluer l'impact d'un tel projet sur les diverses composantes décrites et enfin 3) de suggérer des mesures de mitigation susceptibles d'atténuer les impacts identifiés.

Financing/*Financement:* Silice Madeleine Inc

$90 000

## 0605-250

Poon, D
(604) 666-2862
Environment Canada; Conservation and Protection; Environmental Protection

**Characterization & control of odourous emissions from oil & natural gas fields in British Columbia**

To characterize and assess controls of odour emissions from oil and natural gas production fields in Fort St. John, B.C. area. An emission audit manual to be produced for use by field operators and regulatory agencies to properly assess odourous emissions. In 1984-85 report completed for Phase 1 - odour emission identification and characterization. In 1986-87 report completed for Phase 2 - emission quantification and control assessment. In 1988-89 an emission audit manual is to be produced.

Financing/*Financement:* Panel on Energy Research and Development

$125 000

**START/*DÉBUT***: *1984 06* ***END/FIN***: *ongoing*

## 0605-251

Powell, M
(519) 925-3108
General Delivery

**Development of methods for the analysis of alkyl lead, tin and mercury compounds in effluent, surfaces and groundwater**

To develop a method for the measurement of alkyl lead, tin and mercury species such as tetraethyl lead, butyl tin and methyl mercury in water or liquid effluent samples.

Financing/*Financement:* Ontario Ministry of Environment

$65 000

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0605-252

Prior, M
Coppock, R
(403) 632-6761
Alberta Environmental Centre

**Hydrogen sulphide toxicoses in domestic livestock**

To investigate hydrogen sulphide toxicity in domestic livestock.

Financing/*Financement:* Alberta Environmental Centre

$115 000

**START/*DÉBUT***: *1983 04*

## 0605-253

Prior, M
Khan, A
(403) 632-6761
Alberta Environmental Centre

**Biochemical effects of sulphur compounds**

To determine the biochemical effects of oral or inhalation exposure of sulphur-containing compounds in animals.

Financing/*Financement:* Alberta Environmental Centre

$240 000

**START/*DÉBUT***: *1983 04*

## 0605-254

Prior, M
Lillie, L
(403) 632-6761
Alberta Environmental Centre

**Reproductive effects of sulphur gases**

To study the effects of exposure to sulphur-containing compounds on the reproductive performance and productivity of animals, including in-vitro and post-natal effects.

Financing/*Financement:* Alberta Environmental Centre

**START/*DÉBUT***: *1989 07*

## 0605-255

Prior, M
Lillie, L
(403) 632-6761
Alberta Environmental Centre

**Chronic effects of sulphur gases**

To study the biomedical effects of repeated exposures to sulphur-containing compounds in animals and by extrapolation, man.

Financing/*Financement:* Alberta Environmental Centre

$535 000

**START/*DÉBUT***: *1986 04*

## 0605-256

Prior, M
Lillie, L
(403) 632-6761
Alberta Environmental Centre

**Acute effects of sulphur gases**

To investigate the biomedical effects of acute, single exposure to sulphur-containing compounds in animals and by extrapolation, man.

Financing/*Financement:* Alberta Environmental Centre

$590 000

**START/*DÉBUT***: *1983 04*

## 0605-257

Prior, M
Lillie, L
(403) 632-6761

Alberta Environmental Centre

**Inhalation toxicology facilities development**

To develop inhalation system for acute and chronic exposure to toxic or potentially toxic gases, vapours, particulates and aerosols in experimental animals.

Financing/*Financement:* Alberta Environmental Centre

$2 100 000

**START/*DÉBUT***: *1981 04*

## 0605-258

Quilliam, M
(416) 525-9140

Department of Chemistry; McMaster University

**Dual Column Gas Chromatography Method for Determination of Polycyclic Aromatic Compounds**

The development of a dual-column gas chromatography method for the routine analysis of polycyclic aromatic compounds in environmental samples, using retention indices and either general detectors (flame ionization or photoionization) or selective detectors (electron capture or a thermionic senstive). To have efficient protocol, a data base of GC retention indices for various polycyclic compounds will be produced. Validation of data will be through GC/MS, LC/DAD and LC/MS.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$70 000

**START/*DÉBUT***: *1986 10* ***END/FIN***: *1987 11*

## 0605-259

Qureshi, A
(403) 632-6761

Alberta Environmental Centre

**Toxicity testing development**

To develop, evaluate and establish a battery of short-term microbial tests for ecotoxicological assessment. Ongoing in-house project involving research and development and analytical services aspects.

Financing/*Financement:* Alberta Environment

Alberta Environmental Centre

**START/*DÉBUT***: *1984 04*

## 0605-260

Racz, G
(204) 474-6036

University of Manitoba

**Monitor soil characteristics of pasture and cropland used for fertigation**

To monitor the effect of fertilizer plant effluent on soils used for fertigation, and to ensure compliance with the Clean Environment Commission Order. Reports filed annually with the Manitoba Environmental Management Division.

Financing/*Financement:* Simplot Chemical Company Ltd.

$10 000

**START/*DÉBUT***: *1974*

## 0605-261

Racz, W
(613) 545-6113

Queen's University; Pharmacology and Toxicology

**Neurotoxicity of methylmercury**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$91 400

**START/*DÉBUT***: *1988 11* ***END/FIN***: *1989 10*

## 0605-262

Rao, S
(416) 336-4924

Rivers Research Branch; National Water Research Institute; Environment Canada

**Role of particulates in the transport and fate of contaminants in fluvial systems**

To define the role of suspended and sediment particles (organic aggregates/inorganic particles) in the downstream transport of contaminants and establish the active fractions. To evaluate the impact, fate and transport of tar sands, and urban contaminants on various river systems using microbiological activity tests.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT***: *1988 04* ***END/FIN***: *ongoing*

## 0605-263

Rawlings, M
(416) 235-5880

Water Quality Section; Laboratory Services Branch; Ontario Ministry of Environment

**Development of 15 Methods for Technicon TRAAC Colourimetric Systems**

To develop 15 colourimetric methods using the latest hardward and state of the art techniques for continuous flow systems.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$85 000

**START/*DÉBUT***: *1987 04*

## 0605-264

Regier, M
(403) 381-5322

Alberta Environment

**Reclamation of sulphur contaminated soils**

To determine the amount of elemental sulphur that can be left in soil and be amended with calcium carbonate without

significantly adverse soil or vegetation.

Financing/*Financement:* Alberta Environment

Gulf Canada Corporation

Canterra Energy

$95 000

**START/*DÉBUT*:** *1986* **END/FIN:** *1988 00*

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## 0605-265

Reiner, E
(416) 235-5903

Ontario Ministry of Environment; Lab Services Branch; DWO Section

**MS/MS for rapid dioxin/furan determination**

To achieve more rapid dioxin/furan determinations in complex samples using the instrumental technique of tandem mass spectrometry (MS-MS), by requiring reduced cleanup.

Financing/*Financement:* Ontario Ministry of Environment

$75 000

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 04*

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## 0605-266

Reiner, E
(416) 235-5903

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Identification of unknown organic contaminants by high resolution mass spectrometry (HRMS)**

To identify unknown organic environmental contaminants using high resolution mass spectrometric techniques.

Financing/*Financement:* Ontario Ministry of Environment Laboratory Services Branch

$118 000

**START/*DÉBUT*:** *1987 03* **END/FIN:** *1990 04*

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## 0605-267

Reynoldson, T
(416) 336-4692

Lakes Research Branch; National Water Research Institute; Environment Canada

**Benthic invertebrate/contaminant cycling**

To identify contaminant uptake rates in laboratory and field. To determine the utility of invertebrates as indicators of contaminant effect. To determine the utility of oligochaetes as a bioassay organism for contaminated sediments.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$500 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

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## 0605-268

Ribo, J
(306) 975-5789

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Organic contamination in groundwater**

To understand the environmental behaviour of organic contaminants (pesticides and industrial chemicals) in groundwater systems. This includes the assessment of the toxicity of potential organic contaminants and also the study of the influence of soil and water properties on their physicochemical properties (adsorption, transport, degradation, persistence), and on the toxic effects to non-target organisms.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1988* **END/FIN:** *1989*

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## 0605-269

Robertson, J
(519) 661-2162

University of Western Ontario

**Reproductive outcomes in southwestern Ontario, 1980 to 1985**

To determine if an association exists between the consumption of drinking water from the St. Clair River and abnormal outcomes of pregnancy and in the first year of life.

Financing/*Financement:* Ontario Ministry of Health

Ontario Ministry of the Environment

$185 000

**START/*DÉBUT*:** *1986 09* **END/FIN:** *1989 09*

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## 0605-270

Robertson, M
(519) 686-0797

Nutech Energy Systems Inc.

**ACPOP - Aqueous Organic Pollutant**

Prime objective is to produce a fixed anatase mineralizer capable of treating solutions with 10 ppm organics with a destruction efficiency of 95% at an operating cost of 0.04 cents/litre. Secondary objectives are to generate a systematic body of chemical and engineeering data needed to develop the mineralizer, develop an anatase coating with a specific area of 50 m2/gm, develop an anatase coating with high affinity for organic molecules in the absence of light, to further identify market niches for the mineralizer, and to evaluate the economics of different mineralizer applications.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$350 000

**START/*DÉBUT*:** *1988 05* **END/FIN:** *1990 04*

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## 0605-271

Rosa, F
(416) 336-4525

Lakes Research Branch; National Water Research Institute; Environment Canada

**Sediment transport and pore water contaminants**

Measure winter sediment flux rates in Lake Erie. Spanish River pore water data interpretation.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$144 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1990 03*

## 0605-272

Rosenfeld, J
(416) 525-9140
McMaster University; Department of Pathology

**Solid-supported Isolation and Derivatization**

The development of a technique utilizing a XAD-2 resin for an adsorbent as well as a support for analytical derivatization of organic compounds.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$73 000
**START/*DÉBUT***: *1987 04* ***END/FIN***: *1989 07*

## 0605-273

Rouleau, A
(418) 545-5213
Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Hydrogéologie des zones de faille et de cisaillement dans les régions du Saguenay et des Territoires-du-Nouveau-Québec (Chibougamau).**

Evaluation statistique de la géométrie des discontinuités secondaires reliées aux zones de faille; évaluation du rôle de ces discontinuités sur la perméabilité des zones de faille; évaluation de l'effet de ces zones sur l'hydrogéologie régionale, en relation avec l'entreposage de déchets toxiques ou radioactifs. Vérifications effectuées sur le terrain.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

$24 000
**START/*DÉBUT***: *1988* ***END/FIN***: *1990 04*

## 0605-274

Rouleau, A
(418) 545-5213
Université du Québec à Chicoutimi; Centre d'études ressources minérales

**Caractérisation hydrogéologique du substratum fissuré de Ville Mercier en vue de sa dépollution.**

Déterminer la géométrie du système de fractures traversant ces formations. Mesurer la perméabilité de ces formations et sa distribution spatiale. Evaluer l'importance relative de la perméabilité de fracture et la perméabilité de matrice.

Financing/*Financement:* Canada, ministère des Approvisionnements et Services

Canada, ministère de l'Environnement

$23 000
**START/*DÉBUT***: *1988* ***END/FIN***: *1989 04*

## 0605-275

Rouleau, C
(418) 724-1747
Université du Québec à Rimouski; Département d'océanographie

**Etude de l'accumulation du mercure et de l'antagonisme sélémium-mercure à l'aide d'indicateurs biochimiques chez la crevette du Saguenay, Pandalus borealis.**

Etude de l'antagonisme SéHg chez P. boréalis en évaluant la cinétique d'accumulation par ingestion du Hg (Me-Hg) dans le muscle abdominal en présence ou non de sélénium et en évaluant la réponse physiologique de l'animal en cours de contamination par la mesure de l'activité de l'enzyme malique et de la glutamate déshydrogénase. Projet de maîtrise.

Financing/*Financement:* Canada, ministère des Pêches et Océans

$27 000
**START/*DÉBUT***: *1985 05* ***END/FIN***: *1988 05*

## 0605-276

Rowney, A
(613) 545-2135
Queen's University; Dept. of Civil Engineering

**Pollutant transport and accumulation in receiving waters**

none available

Financing/*Financement:* Natural Sciences & Engineering Research Council

$45 000
**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0605-277

Rukavina, N
(416) 336-4880
Lakes Research Branch; National Water Research Institute; Environment Canada

**Acoustics of sediments**

To develop and report on acoustic equipment and procedures for mapping the physical properties of polluted basin sediments in lakes and for monitoring sediment accumulation, erosion and resuspension.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$37 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0605-278

Rukavina, N
(416) 336-4880
Lakes Research Branch; National Water Research Institute; Environment Canada

**Sedimentology of Great Lakes and St. Lawrence River sediments**

To study and report on the sedimentology of coastal sediments and polluted basin sediments in the Great Lakes and the St. Lawrence River.

Financing/*Financement:* Environment Canada, Conservation and Protection

Environnement Canada Centre Saint-Laurent

$125 000
**START/*DÉBUT***: *1989 04* ***END/FIN***: *1990 03*

## 0605-279

Sadana, R
Hillier, R
(416) 235-5861

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**The Application of Robotics for the Digestion of fish Samples for Mercury Analysis**

To develop an automated fish digestion procedure by using robotics.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$64 000

**START/*DÉBUT***: *1987 06*

## 0605-280

Sadana, R
Snobel, A
(416) 235-5861

Inorganic Trace Contaminants Section; Laboratory Services Branch; Ontario Ministry of Environment

**Determination of Arsenic, Selenium and Antimony in Environmental Matrices by Flow Injection Analyzer**

To develop a routine semi-automated method for the determination of arsenic, selenium and antimony at ultra-trace concentrations in environmental samples.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$26 000

**START/*DÉBUT***: *1987 06*

## 0605-281

Sala, J
(514) 848-8000

Société d'électrolyse et de chimie Alcan Ltée

**Traitement du lixiviat de la brasque.**

Décomposition des cyanures en solution. Traitement du fluorure en solution.

Financing/*Financement:* Société d'électrolyse et de chimie Alcan Ltée

$300 000

**START/*DÉBUT***: *1987* ***END/FIN***: *1988*

## 0605-282

Salin, E
(514) 398-6236

McGill University

**New methods for rapid sample digestion**

The objective is to develop a system which will process batches of samples. The process involves microwave digestion of the samples while they are in a tube. The results should be a system which digests samples much faster and with minimal hazard.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$40 000

**START/*DÉBUT***: *1989 08* ***END/FIN***: *1991 07*

## 0605-283

Salin, E
(514) 392-5784

Department of Chemistry; McGill University

**Flow injection sample introduction for inductively coupled plasma atomic emission and mass spectrometry**

To generate a sample introduction system for trace level determinations with the following characteristics: Detection limit improvements of at least a factor of 100. Reduction or elimination of matrix effects. Sample throughputs of 30 to 60 per hour. A chemical methodology suitable to a variety of sample types. Secondary objectives: Automation of sample input using the direct sample insertion device for icp-aes and icp-ms. Feedback from the instrument (or controller) to the sample introduction system so as to provide for intelligent modification of the experiment by either changing the chemistry (select standard additions or martix matching) when justified by 'expert' computer anaylsis of the data. Component speciation. Output: Progress Reports 1988 and June 1989.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$132 500

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1991 03*

## 0605-284

Schertzer, W
(416) 336-4920

Lakes Research Branch; National Water Research Institute; Environment Canada

**Contaminant modelling of Little Turkey Lakes and Lake Ontario**

To complete hydrological modelling of Little Turkey Lakes for application to toxic mass balance models. Preliminary testing of existing toxic exchange models to Little Turkey Lakes.

Financing/*Financement:* Environment Canada, Conservation and Protection

$100 000

**START/*DÉBUT***: *1988 04* ***END/FIN***: *1993 03*

## 0605-285

Schmidt, J
Booth, R
(416) 336-4541

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of leachate/contaminated groundwaters from landfills and industrial sites**

To assess existing treatment technologies and develop and demonstrate technically feasible, cost-effective technologies for the treatment of leachate or contaminated ground-

water from landfills. To provide technical support and technical advice. Interim publications available from project investigators.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Toxics Program Funding

$2 257 000

**START/*DÉBUT***: *1983* ***END/FIN***: *ongoing*

## 0605-286

Schmidt, J
Zaidi, A
(416) 336-4541

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of aqueous effluents from in situ bitumen/ heavy oil recovery operations**

To develop and demonstrate cost-effective technologies for the treatment of wastewaters from bitumen/heavy oil operations. Technologies will be such as to permit the recycling of wastewaters, or surface water discharge. Interim reports available from the project investigator.

Financing/*Financement:* Panel on Energy Research and Development

Department of Supply and Services Canada

Alberta Oil Sands Technology & Research Authority

Environment Canada, Conservation and Protection

Industry

$5 581 200

**START/*DÉBUT***: *1982* ***END/FIN***: *1992 03*

## 0605-287

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Field sampling to monitor impacts resulting from in-situ heavy oil subsurface disposal practices**

To develop and estimate costs associated with the geologic, hydrogeologic and hydrogeochemical sampling and testing component of a field program to monitor the potential impact of waste fluid injection in the vicinity of Cold Lake, Alberta. Report copies are still available.

Financing/*Financement:* Panel on Energy Research & Development

$45 000

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1987 06*

## 0605-288

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Environmental implications of land application of diesel invert drill cutting residues**

To determine whether diesel invert drill cutting residues can be applied to soil (ie: land treatment) at a practical and environmentally acceptable application rate. To determine the most cost-effective toxicity amending substrate to add to the soil/ drilling residue mixture. Five year project is now complete, final report is in the last stage of review.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

$334 000

**START/*DÉBUT***: *1984 09* ***END/FIN***: *1989 03*

## 0605-289

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Waste sludges produced by the Canadian natural gas processing industry**

To develop, validate and publish a cost-effective methodology for determining the characteristics and environmental significance of natural gas plant sludges. To examine all potential sludge treatment/ disposal options and associated cost implications. Final draft report is due March 1990.

Financing/*Financement:* Panel on Energy Research & Development

Environmental Research Advisory Council, Canadian Petroleum Association

Alberta Research Council

$540 000

**START/*DÉBUT***: *1984 05* ***END/FIN***: *1990 03*

## 0605-290

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Evaluation of Canadian and American procedures used in the assessment of complex wastewaters**

To evaluate the sensitivity and reliability of the individual testing procedures using reference toxicant mixtures and treated final wastewaters from a variety of industrial sources. To demonstrate the usefulness of short-term cost-effective acute and chronic toxicity testing procedures to compare with and complement the chemical characterization approach.

Financing/*Financement:* Department of Supply and Services Canada

Environment Canada, Conservation & Protection

Ontario Ministry of Environment

$306 000

**START/*DÉBUT***: *1987 01* ***END/FIN***: *1990 03*

## 0605-291

Scroggins, R
(819) 997-1223

Environment Canada; Conservation & Protection; Industrial Programs Branch

**Aquatic toxicity impact studies relevant to Ontario sewage treatment plant effluent discharges**

To collect and review relevant municipal STP effluent toxicity and receiving water impact information and studies to help focus the efforts of the Ontario STP effluent toxicity field characterization program. Report has been published by Ontario MOE as a MISA publication.

Financing/*Financement:* Ontario Ministry of Environment

$40 000

**START/*DÉBUT*:** *1987 02* **END/FIN:** *1988 02*

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## 0605-292

Sekerka, I
(416) 336-4657

Research and Applications Branch; National Water Research Institute; Environment Canada

**Continuous flow analytical systems**

To develop in-line preconcentration and digestion systems. To develop FIA method for ammonia using isothermal distillation principle. To test the robotic system under routine operation conditions.

Financing/*Financement:* Environment Canada, Conservation and Protection

**START/*DÉBUT*:** *1988 04* **END/FIN:** *1990 03*

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## 0605-293

Sérodes, J
(418) 656-2868

Université Laval; Département de génie civil

**Valorisation des matériaux de dragage par création d'habitats fauniques.**

Développer des habitats (îles, battures) à partir des produits de dragage dans le Saint-Laurent avec confinement dans le cas des sédiments contaminés.

Financing/*Financement:* Fonds personnel

**START/*DÉBUT*:** *1985*

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## 0605-294

Servos, M
(416) 336-4778

Lakes Research Branch; National Water Research Institute; Environment Canada

**Fate and effects of atmospheric contaminants transported across lake air/water interfaces**

To investigate the factors controlling the gas transfer of persistent toxic compounds at the air-water interface.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$600 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1992 03*

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## 0605-295

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Point source impact monitoring techniques; marine benthic environment**

Subproject title: Point source benthic biological monitoring in Tuktoyaktuk Harbour, NWT. 1) To assess effects of contaminants released into the harbour on the indigenous benthic fauna. 2) To assess methods for studying sublethal effects on benthic fauna to determine which methods are suitable for wider application to programs for monitoring impacts from Beaufort Sea development.

Financing/*Financement:* Northern Oil and Gas Action Program

Environment Canada, Conservation and Protection

$320 000

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1988 03*

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## 0605-296

Shearer, R
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Beaufort Sea baseline monitoring program for Amauligak drilling and production activities**

To conduct a baseline survey near the Amauligak F-24 wellsite to provide data which can be used as a benchmark for future environmental effects monitoring programs.

Financing/*Financement:* Northern Oil and Gas Action Program

Baseline Studies Fund

$50 000

**START/*DÉBUT*:** *1987 07* **END/FIN:** *1988 03*

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## 0605-297

Sherbin, G
(416) 973-1098

Environment Canada; Environmental Protection

**Federal AOX survey of Ontario kraft mill effluents**

To provide baseline data for the concentration of adsorbable organically-bound halogen (AOX) in the final effluents from Ontario kraft mills. This data will be used to develop MISA regulations.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT*:** *1988 07* **END/FIN:** *1989 07*

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## 0605-298

Silverberg, N
(418) 724-1753

Université du Québec à Rimouski; Département d'océanographie

**La biogéochimie et la diagénèse précoce de l'interface eau-sédiment marin**

Comprendre les interactions des particules en voie de sédimentation et les sédiments avec les processus biologiques chimiques et les transformations et flux qui en résultent. Les études dans le chenal laurentien comprennent le cycle de la matière organique, les métaux, la bioturbation et les flux verticaux.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

Fonds pour la formation des chercheurs et l'aide à la recherche

$22 000
**START/*DÉBUT***: *1987* ***END/FIN***: *1989*

## 0605-299

Smillie, R
(403) 632-6761
Alberta Environmental Centre

**Trace organic analysis and method development**

Trace organic analyses and method development is provided for enforcement of provincial statutes, and for support of applied research dealing with effective use, regulation and environmental impact of persistent organic chemicals.

Financing/*Financement:* Alberta Environment
Alberta Community & Occupational Health
Alberta Forestry Lands & Wildlife

## 0605-300

Smoragiewicz, W
(514) 282-3922
Université du Québec à Montréal; Département des sciences biologiques

**Présence possible des mycotoxines secrétées par les microorganismes retrouvés dans les systèmes de ventilation.**

L'évolution des systèmes de ventilation a été accompagnée d'une série très variée de troubles de santé. Parmi les nombreux facteurs qui peuvent en être responsables, on retrouve les microorganismes entraînés par les courants d'air après une incubation dans les endroits différents des systèmes. Nous proposons une recherche sur la possible production de mycotoxines par des champignons se trouvant dans les systèmes de ventilation.

Financing/*Financement:* Confédération des syndicats nationaux
$13 750
**START/*DÉBUT***: *1987 09* ***END/FIN***: *1988 09*

## 0605-301

Smoragiewicz, W
Robitaille, P
(514) 282-3922
Université du Québec à Montréal; Département des sciences biologiques

**Analyse de certains paramètres microbiologiques et physico-chimiques des eaux usées du réseau d'égout de Montréal.**

L'objectif de notre recherche est d'identifier la présence de certains paramètres biologiques et physico-chimiques pouvant occasionner aux travailleurs des problèmes de santé (microorganismes et produits toxiques) et sécurité (gaz explosifs).

Financing/*Financement:* Fonds institutionnel de recherche
$6 000
**START/*DÉBUT***: *1987 06* ***END/FIN***: *1988 06*

## 0605-302

Solomon, K
(519) 824-4120
Canadian Centre for Toxicology; University of Guelph; Dept. of Environmental Biology

**Persistance, leaching and bioavailability of inorganic and pentachlorophenol wood perservatives**

Study the potential human exposure and ecological importance of the potential dislodgeability of residues of PCP and inorganic preservatives. Output: Interim Report July, 1988. Interim Report April, 1989.

Financing/*Financement:* Ontario Ministry of Environment
$77 100
**START/*DÉBUT***: *1988 01* ***END/FIN***: *1990 12*

## 0605-303

St-Germain, R
(514) 283-7309
Environnement Canada; Protection de l'environnement

**Analyse statistique des données de caractérisation des lieux d'élimination des déchets**

Evaluation des données hydrogéologiques, physico-chimiques et biologiques d'une série d'études de caractérisation de terrains contaminés au Canada. Dans le but d'identifier des paramètres pouvant servir d'indicateurs du comportement spatio-temporel d'un ensemble de substances.

Financing/*Financement:* Ministère des approvisionnements et services
Environnement Canada, Conservation et protection
Ministère de l'environnement du Québec
$43 600
**START/*DÉBUT***: *1989 01* ***END/FIN***: *1989 08*

## 0605-304

St-Laurent, D
(514) 651-4383
Université du Québec à Montréal; Département des sciences biologiques

**Etude de l'effet sublétal de substances génotoxiques vis-à-vis le bioindicateur de toxicité aquatique Selenestrum capricornutum.**

Investigation de la relation effet sublétal / létal sur l'algue suite à son exposition à une substance génotoxique, simulant l'effet d'un effluent génotoxique déversé dans un milieu récepteur de type lotique et lentique. Cette étude est orientée de façon à développer un test rentable de létalité algale (afin de mieux évaluer le risque au phytoplancton). Projet de maîtrise.

Financing/*Financement:* Conseil de recherche en sciences naturelles et en génie

## 0605-305

Stillman, M
(519) 679-2111
University of Western Ontario; Department of Chemistry

**Development of an expert system for automated analysis of metals**

To develop a demo expert system to fully control an AA for metal analysis. To develop a generic expert system to monitor and model quality control procedures used for data analysis. Investigate use of an expert system for technical personnel training. Output: 'Development of ACexpert. Design of an expert system for automated metal analysis by atomic absorption spectroscopy', W.R. Browett, T.A. Cox, M.J. Stillman, Dept. of Chem., University of Western Ontario. 'Expert system shells in analytical chemistry. The design of ACexpert: Automation of metal ion determination using AAS', submitted to Progress in Analytical Chemistry. See the OMOE's Inventory of R&D Projects for more listings.

Financing/*Financement:* Ontario Ministry of Environment Research Advisory Committee

$151 200

**START/*DÉBUT***: *1989 04* ***END/FIN***: *1992 03*

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## 0605-306

Stillman, M
(519) 679-2111

University of Western Ontario; Department of Chemistry

**An Expert System for Quality Assurance in Analytical Chemistry**

The development of a generic expert system for use as a quality control and quality assurance program in the analytical laboratory. The study will involve the design and implementation of a prototype system software.

Financing/*Financement:* Ontario Ministry of Environment, Research Advisory Committee

$54 100

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1988 05*

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## 0605-307

Strachan, W
(416) 336-4775

Lakes Research Branch; National Water Research Institute; Environment Canada

**Environmental distribution of toxic chemicals**

Investigate the role of the atmosphere in loading toxic chemicals to Canadian surface waters.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

$300 000

**START/*DÉBUT***: *1987 04* ***END/FIN***: *1992 03*

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## 0605-308

Strosher, M
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Air monitoring program for the Swan Hills special waste management facility**

To assess the background organic compounds in the vicinity of the proposed waste incineration site near Swan Hills prior to the operation of the facility. A report of the findings has been submitted to Western Research and subsequently to the Alberta Special Waste Management Corporation.

Financing/*Financement:* Western Research Division of Bow Valley Resources

Alberta Special Waste Management Corporation

$29 000

**START/*DÉBUT***: *1986 01* ***END/FIN***: *1987 08*

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## 0605-309

Strosher, M
Peake, E
(403) 220-6137

Kananaskis Centre for Environmental Research; University of Calgary

**Characterization of coal coprocessing products**

To develop an effective chemical separation scheme and identify the components of a biologically active fraction derived from coal coprocessing. Interim report submitted to Health and Welfare Canada, March 1989.

Financing/*Financement:* Health and Welfare Canada

$25 000

**START/*DÉBUT***: *1989 01* ***END/FIN***: *1989 06*

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## 0605-310

Sushan, B
(416) 221-9066

SCIEX (Division of MDS Health Group Ltd.)

**Tage 6000 Method for Measurement of Dioxin and Furan Emissions at Municipal Solid Waste Incinerators**

To assess cost effectiveness and practicality of a methodology to rapidly determine dioxins and furans at municipal solid waste incinerators.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$141 000

**START/*DÉBUT***: *1985 01* ***END/FIN***: *1987 12*

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## 0605-311

Suter, S
(416) 235-5896

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Investigation of the use of Aqueous Phase Liquid Extractor for ultra trace organic sampling of water**

To develop rapid on-site methods of samping and extraction of ultra-trace levels of organics, especially the chlorinated dibenzo-p-dioxins and furans.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$25 000

**START/*DÉBUT***: *1987 07*

## 0605-312

Sutherland, D
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Criteria for the control and monitoring of petroleum development impacts on the Mackenzie River**

To develop criteria for the regulation and monitoring of petroleum waste discharges to the Mackenzie River through the assessment of impacts on water and sediment quality and biota (toxicity and bioaccumulation). Summary report available in 1988.

Financing/*Financement:* Northern Oil and Gas Action Program

$330 000

**START/*DÉBUT***: *1984 04* ***END/FIN***: *1988 03*

## 0605-313

Sutherland, D
(403) 873-3456

Environment Canada; Conservation and Protection; Environmental Protection

**Assessment of impact detection techniques and approaches at a gold mine in the NWT - Lupin mine**

To monitor the impact of gold mining effluents on water quality, sediment, and biota in Contwoyto Lake; and to evaluate monitoring techniques.

Financing/*Financement:* Environment Canada, Conservation and Protection

$24 000

**START/*DÉBUT***: *1985 04* ***END/FIN***: *1986 03*

## 0605-314

Tashiro, C
(416) 235-5895

Ontario Ministry of Environment; Lab Services Branch; DWO Section

**Investigation of formation of dioxins/furans in prescribed burns**

To determine whether forest fires are a source to the environment of dioxins/furans.

Financing/*Financement:* Ontario Ministry of Environment

$30 000

**START/*DÉBUT***: *1988 07* ***END/FIN***: *1989 12*

## 0605-315

Tashiro, C
(416) 235-5895

Ontario Ministry of Environment; Lab Services Branch; DWO Section

**Accuracy and reproducibility of compound identification by GC-MS (round-robin study)**

To investigate the accuracy and reproducibility of organic compound identification in complex environmental samples.

Financing/*Financement:* Ontario Ministry of Environment

$25 000

**START/*DÉBUT***: *1989 10* ***END/FIN***: *1990 04*

## 0605-316

Tashiro, C
(416) 235-5895

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Automated Cleanup Method for Dioxins in Fish**

The study includes 2 phases: I: Develop improved fish cleanup based on carbon adsorbents Phase II: Automate cleanup to allow overnight sample processing.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$34 000

**START/*DÉBUT***: *1986 10*

## 0605-317

Tashiro, C
(416) 235-5897

Drinking Water Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Method Development for Determination of Chlorinated Dibenzo-p-dioxins/Dibenzofurans in Ambient Air**

To develop a method for the determination of dioxins and furans in ambient air so that the transport of dioxins/furans in the atmosphere can be studied.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$34 000

**START/*DÉBUT***: *1987 10*

## 0605-318

Tay, K
(902) 426-8301

Environment Canada; Conservation & Protection; Atlantic Region

**Hazardous organic compounds in sediment in the Strait of Canso**

To assess various hazardous organic compounds, e.g. PAH and chlorinated compounds in the sediment of the Strait of Canso.

Financing/*Financement:* Ocean Dumping Control Act Research Fund

$6 000

**START/*DÉBUT***: *1987 10* ***END/FIN***: *1988 05*

## 0605-319

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Non-target impacts of bran-bait formulations of grasshopper control agents in prairie ecosystems**

(as above) Final report due March 1990.

Financing/*Financement:* Environment Canada, Conservation & Protection

Agriculture Canada

**START/*DÉBUT*:** *1989 01* **END/FIN:** *1990 03*

## 0605-320

Thompson, B
(403) 468-8008

Environment Canada; Conservation & Protection; Environmental Protection

**Research into the use of filtration for tar-sands tailings pond water treatment, for purposes of recycling**

(as above) Final report April 1989.

Financing/*Financement:* Department of Supply & Services Canada

Environment Canada, Conservation & Protection

Syncrude Canada Ltd.

$146 000

**START/*DÉBUT*:** *1987 04* **END/FIN:** *1989 04*

## 0605-321

Thompson, T
(416) 235-5890

Ontario Ministry of Environment; Lab Services Branch; DWO Section

**Development of methodology for analysis of 2, 3, 7, 8 - substituted dioxins/furans in fish**

Develop and validate a method for definitive analysis of the 17 dioxins/furans that have chlorine substituted at the 2, 3, 7, 8 - positions.

Financing/*Financement:* Ontario Ministry of Environment

$60 000

**START/*DÉBUT*:** *1989 04* **END/FIN:** *1990 04*

## 0605-322

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2208)**

To determine the health significance of 1) micro-organisms in drinking water, 2) the organic fraction of drinking water or individual components thereof, and 3) inorganic substances in drinking water.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$660 471

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-323

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2209)**

To identify the health hazards posed by point-of-use treatment devices.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$107 820

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-324

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2211)**

Development of appropriate legislation, regulations, policies, guidelines, and standards to safeguard drinking water quality.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$480 567

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-325

Tobin, R
(613) 957-3128

Health and Welfare Canada; Environmental Health Directorate

**Drinking water (major goal: 2212)**

To assess the impact on health of water treatment technologies.

Financing/*Financement:* Health and Welfare Canada, Environmental Health Directorate

$389 307

**START/*DÉBUT*:** *1985 04* **END/FIN:** *ongoing*

## 0605-326

Toner, D
(416) 235-5759

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Evaluation of 'TOX' Analyser for on-site monitoring of Chlorinated Organics in Leachate**

1. Develop methodology for field applications 2. Documentation of adequate QC/QA.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$33 000

**START/*DÉBUT*:** *1987 04*

## 0605-327

Toner, D
(416) 235-5759

Trace Organics Section; Laboratory Services Branch; Ontario Ministry of Environment

**Mass Selective Detector (MSD) for Mobile Laboratory Use**

Provision of MSD capability for Mobile Laboratory Operations.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$60 000

**START/*DÉBUT*:** *1987 04*

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## 0605-328

Turcotte, J
(418) 656-7474

Université Laval; Département de chimie

**Impact des boues des eaux usées sur l'environnement.**

Etudes des effets de l'enfouissement et de l'incinération des boues provenant du traitement des eaux usées. Evalue la lixiviation des métaux lourds des boues dans le sol et les pertes dans l'air lors de l'incinération des boues.

Financing/*Financement:* Agence canadienne de développement international

Gouvernement du Maroc

Fonds institutionnel de recherche

$25 000

**START/*DÉBUT*:** *1984 09* **END/*FIN*:** *1987 09*

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## 0605-329

Vachon, D
(416) 336-4558

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Treatment of woodroom and paper making effluents, pulp and paper industry**

To provide technical assistance to HQ and Regional personnel concerned with pulp and paper wastewater treatment systems. Project is complete. Final report available in 1989.

Financing/*Financement:* Environment Canada, Conservation and Protection

$85 000

**START/*DÉBUT*:** *1982* **END/*FIN*:** *1986*

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## 0605-330

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Développement d'indicateurs biochimiques de la toxicité des contaminants au milieu marins**

Mise au point d'un bioessai sous-létal chronique pour la toxicité des sédiments marins à count terme.

Financing/*Financement:* Ministère d'approvisionnements et services Canada

Environnement Canada, Conservation et protection

Department of Fisheries and Oceans Canada

Ocean Dumping Control Act Research Fund

Université du Québec

$210 000

**START/*DÉBUT*:** *1988 07* **END/*FIN*:** *1990 01*

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## 0605-331

Van Coillie, R
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Elaboration d'une méthodologie d'étude des effets des cyanures en milieu marin.**

1) Revue bibliographique sur les effets et les conséquences des cyanures en milieu marin. 2) Verification du degré de corrélation entre certains effets biologiques observés et les tenues en cyanures détectées dans le biotope. 3) Choix d'une méthode analytique permettant de quantifier les formes de cyanures dans le milieu marin. 4) Planification d'une campagne d'échantillonnage permettant de les effets anticipés. Rapport final disponible.

Financing/*Financement:* Environnement Canada, Conservation et Protection

Environnement Canada, Conservation et Protection

$8 000

**START/*DÉBUT*:** *1986 11* **END/*FIN*:** *1987 09*

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## 0605-332

Van Coillie, R
Sloterdijk, H
(514) 283-9997

Centre Saint-Laurent; Environnement Canada

**Contaminants décelés dans la phase aqueuse du fleuve St-Laurent (Cornwall - Montréal)**

Toxiques transportés dans le fleuve avant Montréal au Québec.

Financing/*Financement:* Environnement Canada, Conservation et protection

$6 000

**START/*DÉBUT*:** *1987 03* **END/*FIN*:** *1988 06*

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## 0605-333

Van Loon, J
(416) 978-5612

Institute of Environmental Studies; University of Toronto

**Ultrasonic Nebulizer for Production of Aerosols for Atomic Spectrometric Analysis**

1. To develop an inexpensive but reliable ultrasonic nebulizer system. 2. To evaluate this device using Atomic Absorption Spectrometry, Inductively Coupled Plasma/Mass Spectrometry, and Inductively Coupled Plasma Atomic Emission Spectrometry. 3. To transfer this technology to MOE.

Financing/*Financement:* Ontario Ministry of the Environment, Research Advisory Committee

$31 000

**START/*DÉBUT*:** *1985 10* **END/*FIN*:** *1988 02*

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## 0605-334

Vandenberg, A
(306) 975-5746

Groundwater Division; National Hydrology Research Institute; Environment Canada

**Contaminant transport modelling**

To improve knowledge about transport and fate of contaminants in groundwater. To adapt predictive models to reflect the improved knowledge.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0605-335

Visser, S
(403) 220-5264
Kananaskis Centre for Environmental Research; University of Calgary

**Impact of sulphur dust & lime on forest soil chemical parameters, plant productivity & revegetation**

1. To determine the effects of S0 and lime applied at 3 rates on the plant community and soil chemical/biological parameters of a lodgepole pine forest. 2. To attempt restoration of the understory in a pine forest severly acidified by S0 dust by liming and planting acid/salt-tolerant plants. No report available.

Financing/*Financement:* Canadian Petroleum Association

**START/*DÉBUT*:** *1987 04*

## 0605-336

Warwick, W
(306) 975-5739
Aquatic Ecology Division; National Hydrology Research Institute; Environment Canada

**Biological assessment of toxic chemical effects on freshwater ecosystems**

To finalize and process research data on chironomid responses to contaminants in freshwater ecosystems. To develop new research initiatives for FY 1990-91 in benthic ecology, toxicology and/or palaeolimnology.

Financing/*Financement:* Environment Canada, Conservation & Protection

**START/*DÉBUT*:** *1986* **END/FIN:** *ongoing*

## 0605-337

Weinberger, P
(613) 564-2334
University of Ottawa; Biology

**Mechanisms of aquatic phytobiotic interactions with some chemical stressors**

none given

Financing/*Financement:* Natural Sciences & Engineering Research Council

$80 520

**START/*DÉBUT*:** *1984 04* **END/FIN:** *1990 03*

## 0605-338

Wightman, R
(613) 788-3841
Carleton University; Dept. of Chemistry

**Investigation and development of supercritical fluid extraction of trace organics from environmental matrices**

To investigate the application of supercritical fluid extraction techniques for the selective extraction of various classes of organic compounds e.g. PAHs, phenols, from environmental solids.

Financing/*Financement:* Ontario Ministry of Environment

$114 500

**START/*DÉBUT*:** *1988 03* **END/FIN:** *1990 03*

## 0605-339

Wightman, R
(613) 564-2760
Carleton University; Department of Chemistry

**Super Critical Fluid Extraction and Development of Methodology**

To develop and assess the range of applications of SCF extraction techniques for trace organics in solid matrices.

Financing/*Financement:* Ontario Ministry of Environment, Laboratory Services Branch

$50 000

**START/*DÉBUT*:** *1987*

## 0605-340

Winterhalder, K
(705) 675-1151
Laurentian University; Biology

**Metal toxicity, plant metal tolerance and soil detoxification on the Sudbury Industrial Barrens**

To determine the exact nature and mechanism of operation of the toxic principle in Sudbury's acid, metal-contaminanted soils; to determine which plant species are able to grow on toxic soils, and to understand their tolerance mechanism; to fully understand the mechanism by which dolomitic limestone detr ifies the Sudbury barren soils, and to determine what other detoxicants might be used. Reports are available.

Financing/*Financement:* Laurentian University Research Fund

$1 000

**START/*DÉBUT*:** *1978 05*

## 0605-341

Winterhalder, K
(705) 675-1151
Laurentian University; Biology

**The effects of land reclamation procedures on groundwater and streamwater chemistry**

To determine whether the application of dolomitic limestone, as used in the Sudbury Land Reclamation Programme, has a beneficial effect on pH and toxic metal content of groundwater and stream water within the watershed, thereby reducing the necessity of liming acid lakes fed by such watersheds. Report is available.

Financing/*Financement:* Centre in Mining and Mineral Exploration

$16 000

**START/*DÉBUT*:** *1986 04* **END/FIN:** *1988 10*

## 0605-342

Wituschek, E
(604) 666-2815

Environment Canada; Conservation and Protection; Environmental Protection

**Test burn of chlorophenol contaminated wood wastes**

To characterize the emissions (chlorophenol, dioxin, furans), assess environmental impacts and develop emission and air quality criteria for the burning of wood wastes contaminated by chlorophenols. Tests were completed on Sept. 25, 1987. Report scheduled for July 1989.

Financing/*Financement:* Energy, Mines and Resources Canada

British Columbia Ministry of Environment and Parks

Environment Canada, Conservation and Protection

$210 000 **END/*FIN*:** *1987 09*

## 0605-343

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**Assess presence of toxic chemicals in native bird populations of Manitoba**

To investigate organochlorine and PCB levels in native birds, egg samples from short-haired owls and tissues from great-horned owls were used as a pilot study. Further work is pending analytical results. The primary plan is to investigate toxic chemical presence in owls, hawks and fish-eating birds of Manitoba.

Financing/*Financement:* Wildlife Toxicology Fund

$12 500

**START/*DÉBUT*:** *1986 06* **END/*FIN*:** *1988 07*

## 0605-344

Wotton, D
(204) 945-7081

Manitoba Dept. of Environment and; Workplace Safety and Health; Environmental Management

**An investigation of cadmium concentrations in wildlife of Manitoba**

To evaluate cadmium levels in kidney and liver of moose, elk, deer, wolf, bear and coyote in Manitoba.

Financing/*Financement:* Wildlife Toxicology Fund

Manitoba Dept. of Environment and Workplace Safety and Health

$48 700

**START/*DÉBUT*:** *1987 04* **END/*FIN*:** *1989 03*

## 0605-345

Wright, W
(416) 235-5879

Water Quality Section; Laboratory Services Branch; Ontario Ministry of Environment

**Robotics for Subaliquoting Station for Inorganic Tests**

To prepare multiple aliquots of samples which are suitable for Water Quality Section work stations and which are accompanied by identifiers suitable for LIS operations.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$130 000

**START/*DÉBUT*:** *1987 09*

## 0605-346

Wright, W
Cheung, B
(416) 235-5879

Water Quality Section; Laboratory Services Branch; Ontario Ministry of Environment

**Robotics for Dissolved Oxygen Measurement in the Biochemical Oxygen Demand Text (BOD Test)**

To automate the measurements of oxygen concentration required on the first and fifth day of the BOD text.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$21 000

**START/*DÉBUT*:** *1987 03*

## 0605-347

Wright, W
Evans, J
(416) 235-5879

Water Quality Section; Laboratory Services Branch; Ontario Ministry of Environment

**Robotics for Weight Measurement in the Solids Test**

To automate the measurement of weights of filters and dishes containing dried residue from environmental samples. Initial tare weight measurement is also to be automated.

Financing/*Financement:* Ontario Ministry of the Environment, Laboratory Services Branch

$47 000

**START/*DÉBUT*:** *1987 03*

## 0605-348

Zaidi, A
(416) 336-4618

Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Technologies for the recovery of specific contaminants and recycle of industrial effluents**

To ensure the availability of appropriate technology for recovering specific contaminants of concern from industrial effluents with emphasis on the recycle of treated effluents as process water. In 1987-88, the emphasis will be on organic chemicals, food processing and printed circuit board manufacturing industries. Interim reports available from project investigator.

Financing/*Financement:* Environment Canada, Conservation and Protection

Great Lakes Water Quality

Department of Supply & Services Canada

$360 000

**START/*DÉBUT*:** *1980* **END/*FIN*:** *ongoing*

**0605-349**

Zaidi, A
Simovic, L
(416) 336-4618
Environment Canada; Conservation and Protection; Wastewater Technology Centre

**Gold mining effluent treatment**

To continue to collect and disseminate information on alternative technologies to treat gold mining effluents as well as undertake appropriate R&D to ensure that technically and cost-effective technologies are demonstrated for the treatment of gold mining effluents. To provide technical advice and assistance. Reports are available from the project investigator. Two seminars were held in FY 1988-89.

Financing/*Financement:* Environment Canada, Conservation and Protection

Department of Supply and Services Canada

Department of Energy, Mines and Resources Canada

Ontario Ministry of Environment, Municipal Industrial Strategy Abatement

$734 000

**START/*DÉBUT***: *1980* ***END/FIN***: *ongoing*

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